400S BRAVO SERIES COMPUTER WITH INTEGRATED GPS NAVIGATOR

4674A9DX0.950

Software rel. 1.0X

INSTALLATION, USE AND MAINTENANCE

12 USE

WARNING:
When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) it does not control the valves: any intervention must be made separately. For valve control see the relevant instruction manual.
The opening / closing of sections must be notified to Bravo 400S with the dedicated switches (par. 12.2) to provide information on the activity in the field manually. In this way, Bravo 400S will collect data on the job.

12.1 Controls on computer

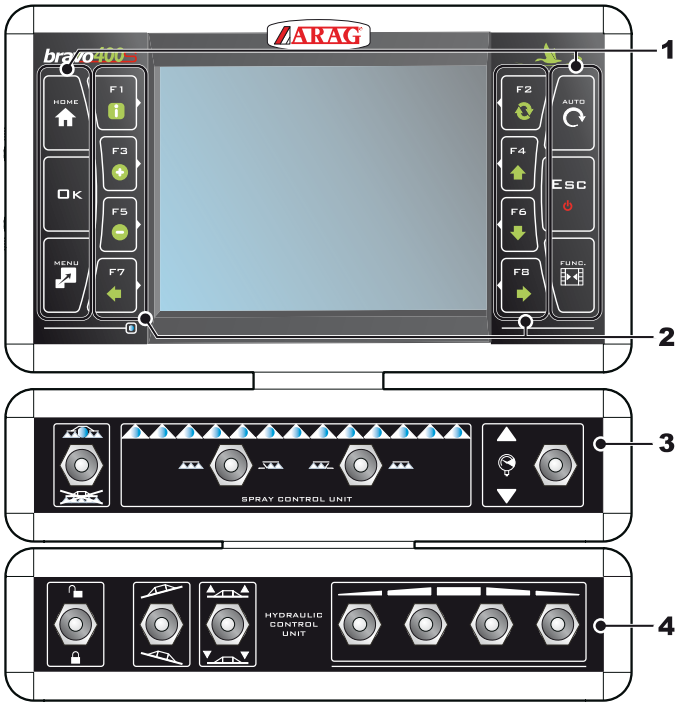


Fig. 229

Legend:

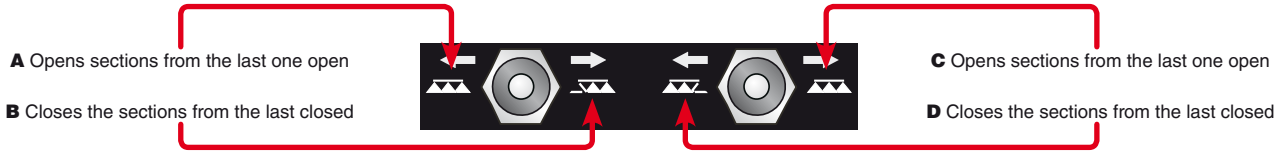
1 Control and display mode keys
2 Function keys.
Function keys are contextual: the function of each depends on what appears on the display, therefore **the use of these keys will be illustrated during the description of the corresponding procedures.**
3 Operating switches for control unit valves
4 Operating switches for oil-hydraulic functions (hydraulic valves)

12.2 Operating switches for control unit valves

WARNING
When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the switches signal the status of each section but do not control them: any intervention on the valves must be made separately, by consulting the instruction manual of the relevant control.
Communicating what happens on the field, Bravo 400S will collect data on the job.

Main control ON	Main control OFF	Section operating switches Open section Closed section	Output increase	Output decrease

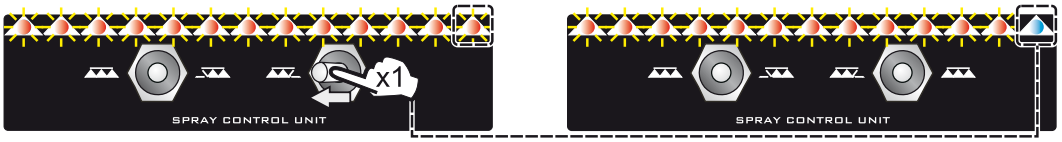
• Switches for sequential control


A Opens sections from the last one open
B Closes the sections from the last closed
C Opens sections from the last one open
D Closes the sections from the last closed

The valves can be opened and closed from the right to the left and vice versa with the section control switches.
Prolonged pressure opens / closes the sections of half boom.

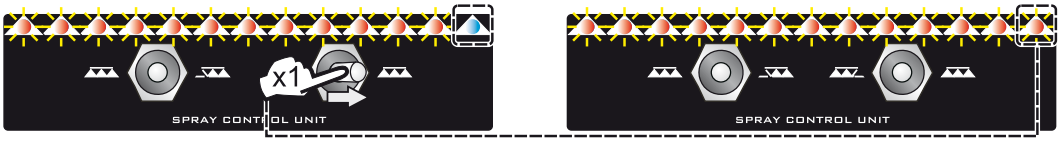
Examples:

• Closing of one section



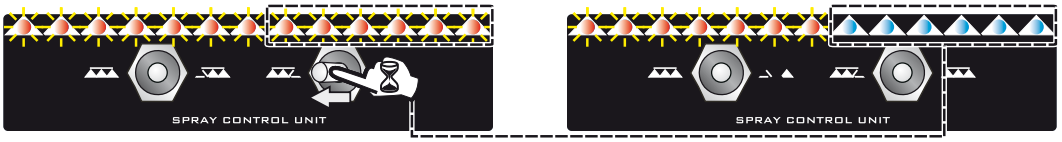
As in the example here, shift once the switch to the left to close the first open section.
Shift several times to close sections in sequence.

• Opening of one section



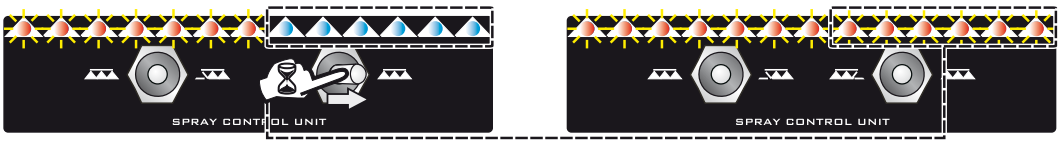
As in the example here, shift once the switch to the right to open the first closed section.
Shift several times to open sections in sequence.

• Simultaneous closing of half boom sections



As in the example here, keep the switch shifted to the left to close the boom open half.

• Simultaneous opening of half boom sections



As in the example here keep the switch shifted to the right to open the boom closed half.

12.3 Operating switches for hydraulic valves

Boom release	Boom lock	Boom clockwise leveling	Boom counter-clockwise leveling	Increase boom height	Decrease boom height	Boom section movement: opening	Boom section movement: closing

12.4 Guidance screen

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the display shows a limited amount of information.

USING THE KEYS

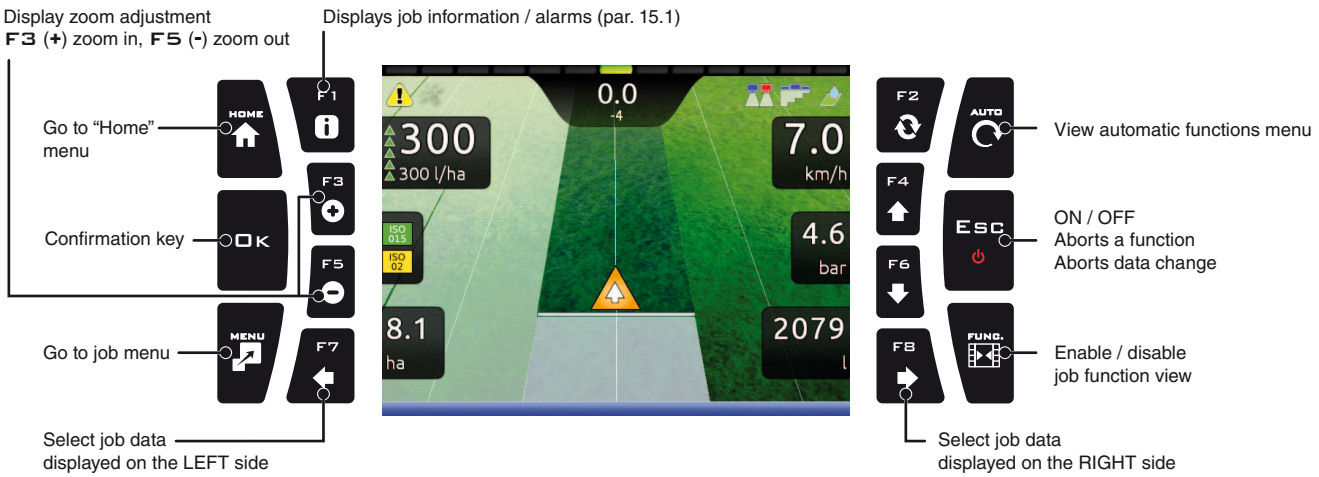


Fig. 230

F1 ÷ F8: Contextual function keys
These keys control what is shown on the display (display zoom adjustment, etc., Fig. 230)
When the function list is displayed, they perform specific functions: the function of each key depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.

DISPLAY ITEMS

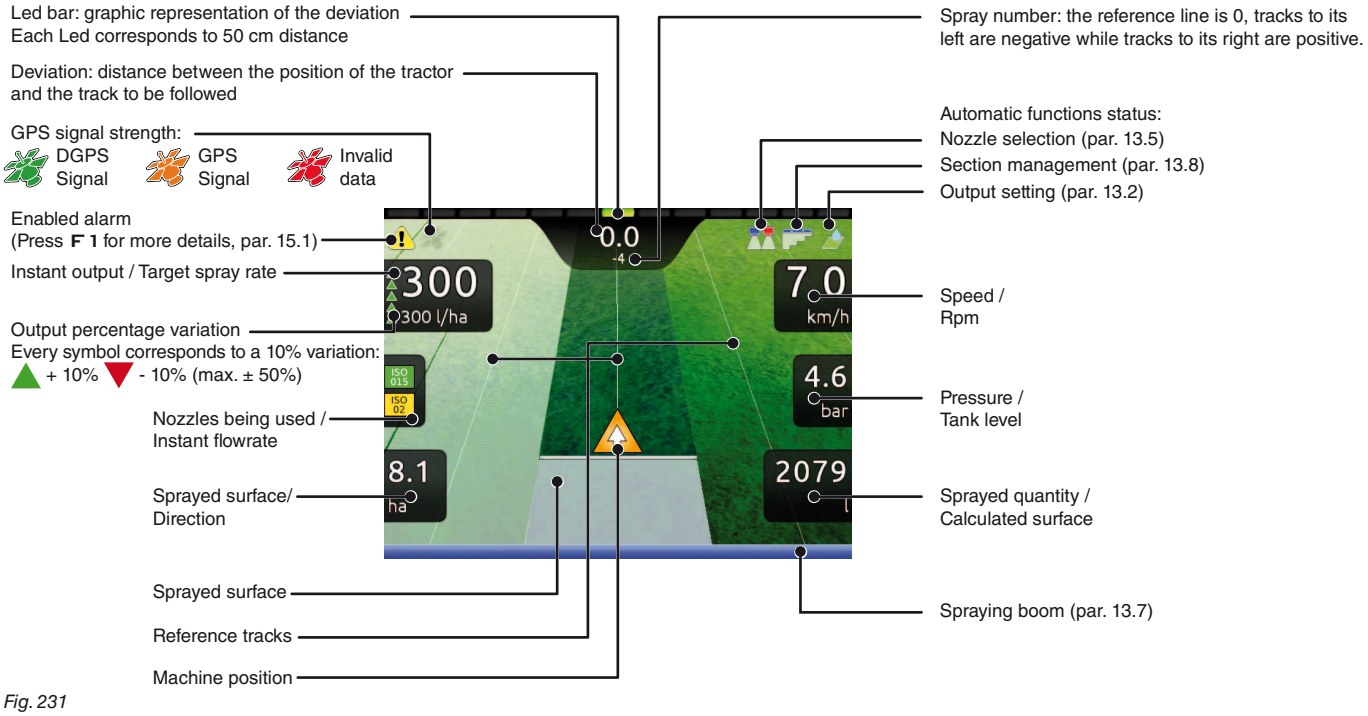


Fig. 231

12.5 Spraying a field

Let us assume we want to spray a field along parallel lines, but only once the edges of the field have been sprayed.

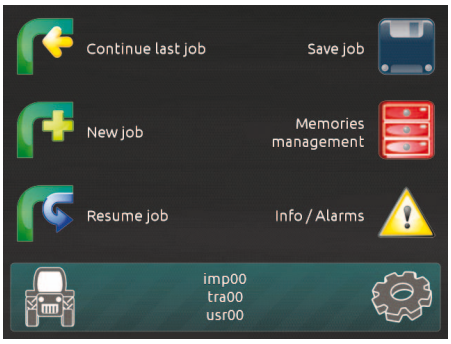


Fig. 232

- Go the beginning of the field to be sprayed.
- Switch Bravo 400S on (par 7.2).
  After self-diagnostics, Bravo 400S displays the "Home" screen (Fig. 232).
- Begin a new job, using the function **F3 New job** (par. 14.3).
- Enter spraying settings.

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the settings are limited to starting the spraying.

SPRAYING SETTINGS

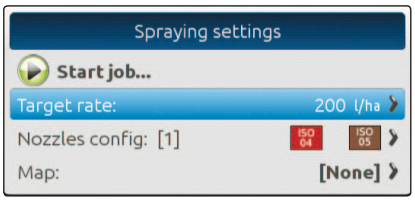


Fig. 233

Fig. 234

Target rate

- Set the spray rate value for the treatment (Fig. 234).
  Press OK to confirm the value.

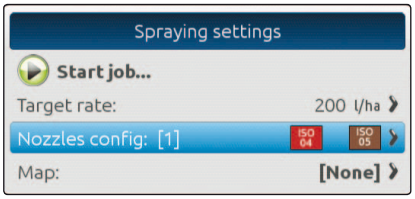


Fig. 235

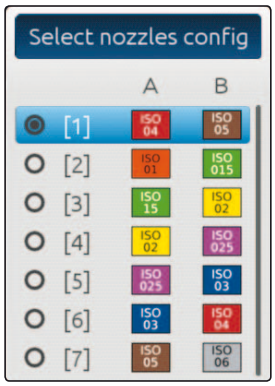


Fig. 236

Select nozzles config.

- Select a nozzle configuration from the list (Fig. 236).
  With this data indicate which nozzles are installed on the boom spraying points (preset configurations in the menu **Spray spots configurations**, par. 10.1.1).
- Press OK to confirm.

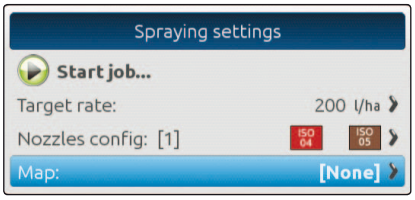


Fig. 237

Fig. 238

Map

If there is at least one map (on the internal memory), you can select a prescription map for the spraying.
According to the position detected by the GPS receiver, Bravo 400S will use the appropriate spray rate for the area that is being sprayed (par. 13.3 Importing and using a prescription map).

- Select a map from the list (Fig. 238).
- Press OK to confirm.

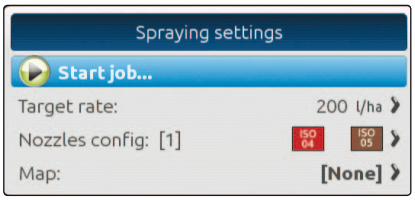


Fig. 239

Fig. 240

Start job

- Select and press OK to switch to guidance.

CONTINUES

Fig. 241

- In the job menu, set the tank level with the function **F3 Tank** (par. 15.3).
- Start spraying by acting on the main control valve switch.
- Start moving along the field perimeter.

MARKING POINTS A AND B

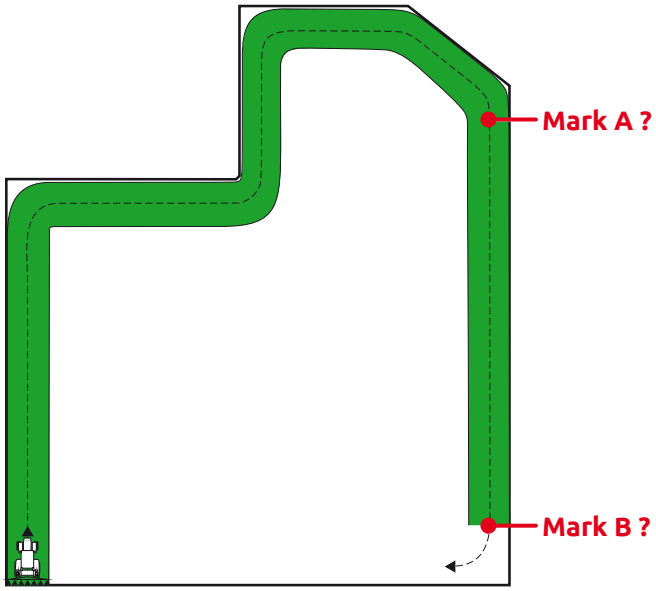


Fig. 242

- While moving along the perimeter of the field, you will mark points A and B (as described in par. 16.7 **F7 New AB**).

This operation is fundamental for Bravo 400S to guide you, during spraying, along tracks parallel to the reference track obtained by marking points A and B.

We recommend marking points A and B while the machine is moving, at both ends of a straight line that is as long as possible: the longer the line marked by points A and B, the lower the error caused by any deviations of the machine itself.

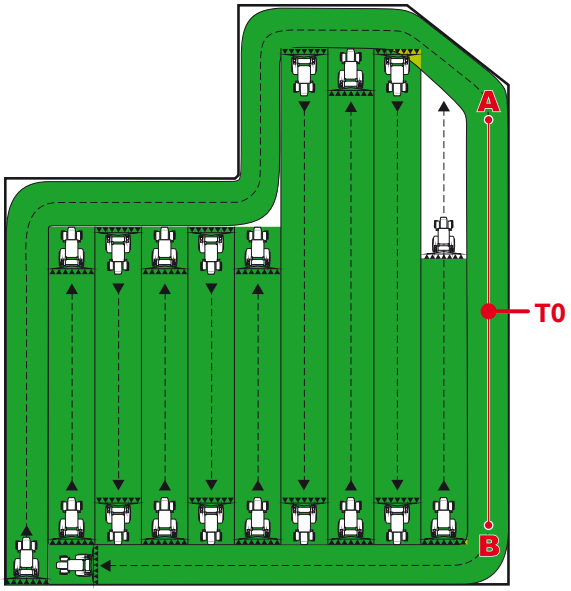


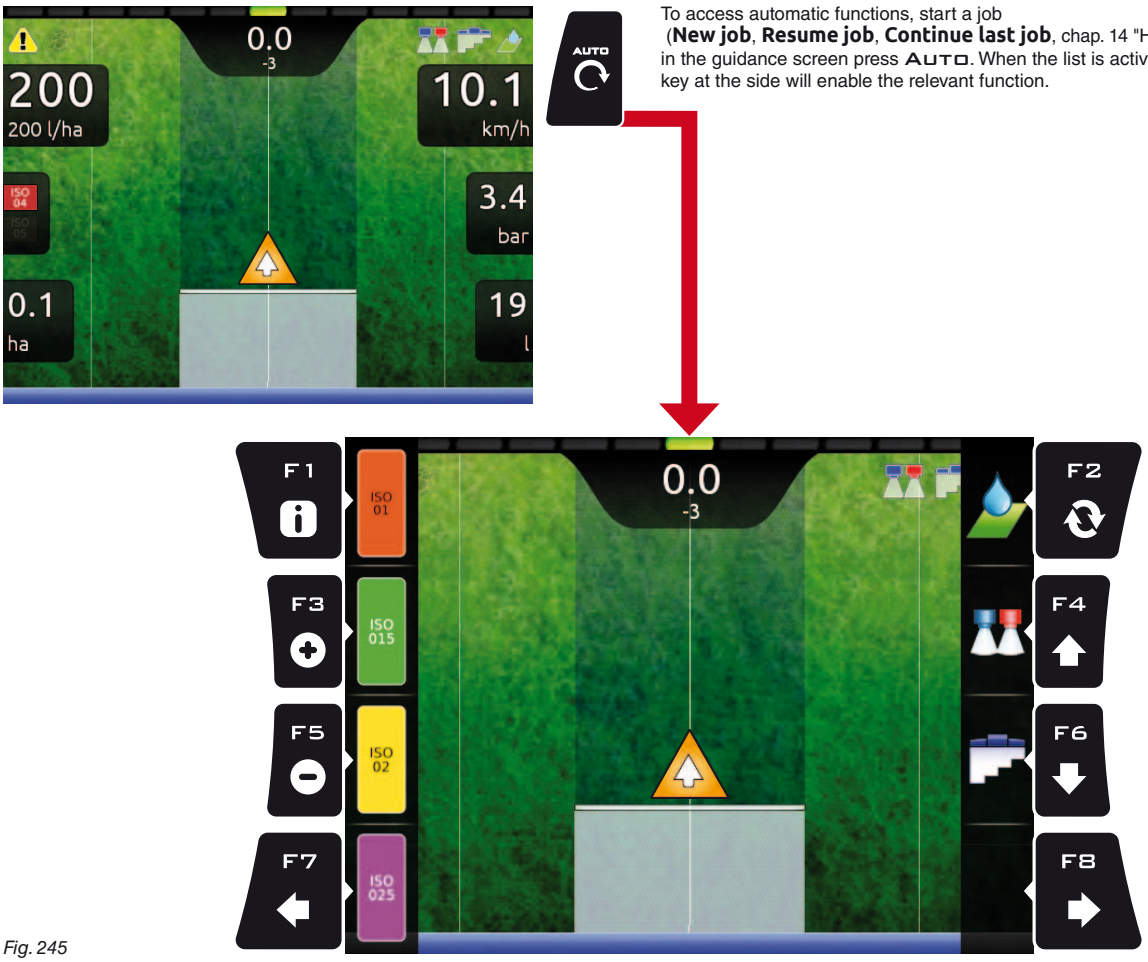
Fig. 243

- Once the line from A to B has been marked (**T0**), it will be possible to spray the rest of the field along parallel lines, (Fig. 243), by following the reference tracks shown on the display (Fig. 244).

Fig. 244

At the beginning of a new job Bravo 400S gives driving directions in the "Straight parallel" mode.
To change guidance mode see function F2 Guidance mode (par. 16.2).

13 AUTOMATIC FUNCTIONS



To access automatic functions, start a job (**New job**, **Resume job**, **Continue last job**, chap. 14 "Home" Menu); in the guidance screen press AUTO. When the list is active (Fig. 245), pressing any key at the side will enable the relevant function.

Fig. 245

The table below lists all available job functions and the corresponding function keys:

Par.		
13.6	ISO 01	Manual selection of NOZZLE A
13.6	ISO 015	Manual selection of NOZZLE B
13.6	ISO 02	Manual selection of NOZZLE C
13.6	ISO 025	Manual selection of NOZZLE D

Par.		
13.2		ON/OFF automatic adjustment
13.5		Automatic nozzle selection ON / OFF
13.8		Automatic section management ON / OFF

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

13.1 Output adjustment

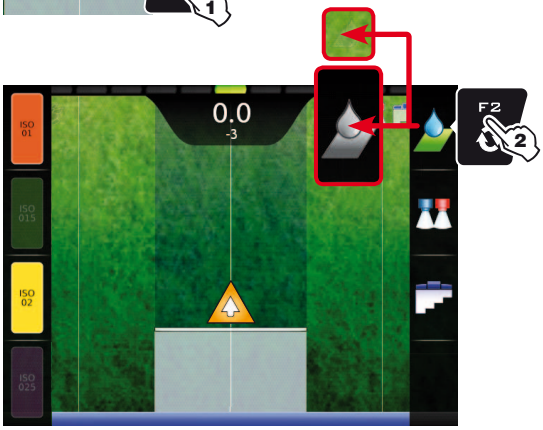
Bravo 400S can control chemical output with an automatic adjustment function (par. 13.2, *DEFAULT: ON*).

AUTOMATIC ADJUSTMENT ON	AUTOMATIC ADJUSTMENT OFF (MANUAL)
Bravo 400S keeps the set spray rate constant regardless from the changes in speed and boom section status. In this case the spray rate can be set with the function **F1 Spray rate** (par. 16.1), or by uploading a prescription map (par. 13.3) from one of the external memories (SD card or pendrive). If necessary, during spraying, it is possible to intervene on the dedicated switch (par. 12.2) to adjust output to crop conditions, increasing or decreasing momentarily the application rate up to ±50%.	Rate manual regulation shall be carried out with the suitable switch (par. 12.2).

13.2 F2 Automatic adjustment ON/OFF

Enables / disables automatic output adjustment *(DEFAULT: ON).*

1 In the guidance screen, press **AUTO**.
2 Press **F2** (Fig. 246) to enable or disable automatic adjustment.



Automatic adjustment ON

Automatic adjustment OFF

Fig. 246

13.3 Importing and using a prescription map

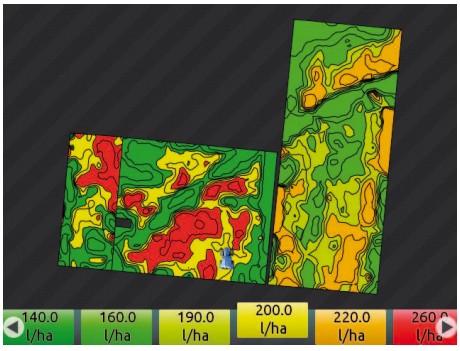


Fig. 247

Bravo 400S can vary output by using the data contained in a "prescription map", which indicates the exact quantity of fluid that must be sprayed at every point in the field.

The map is created thanks to a special analysis and simulation software. The correct spray rate is established for every point on the map, in order to obtain the optimal yield from a field with the minimum expenditure in terms of materials and time.

To enable Bravo 400S to read and use the collected information, the following is required:

- The prescription map must be in " Shapefile ESRI® " format.
- The database field containing the indication of the spray rate that must be applied to the different areas must be named "Rate".
- The database may include other fields, provided that these contain exclusively numerical values (the presence of any alphabetic characters will prevent the database from being imported correctly).

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At this point you must transfer the prescription map from one of the external memories (SD card or pendrive) onto Bravo 400S:

- Save the map on one of the external memories.
- Copy the map onto the internal memory, through the menu **Maps > Copy to internal memory** (from SD card par. 14.4.2, or pendrive par. 14.4.3).
- Select one of the functions in the "Home" menu: **F1 Continue last job** (par. 14.1), **F3 New job** (par. 14.3) or **F5 Resume job** (par. 14.5).
- In the job start screen select the desired prescription map.
- Proceed with the job. According to the position detected by the GPS receiver, Bravo 400S will use the appropriate spray rate for the area that is being sprayed (Fig. 247).

If the tractor is on a "black" area on the map, i.e., without a spray rate indication, Bravo 400S stops spraying.

13.4 How the automatic nozzle selection works (SELETRON system)

In a traditional system, the farming machine speed limits depend on the minimum and maximum pressure of the nozzle in use and on the desired spray rate.
For instance, if we were spraying 100 l/ha with a violet evenfan nozzle ISO110025, the minimum operating speed shall be 6.9 km/h (corresponding to a pressure of 1 bar) while maximum speed shall be 13.9 Km/h (corresponding to a pressure of 4 bars).
This operation field can be restrictive for the features of both crop to be treated and machine.

Operation field of possible combinations of ISO11002 and ISO110025 nozzles

When automatic nozzle selection is enabled, Bravo 400S (using Seletron devices) will enable the nozzle, or combination of nozzles, according to the set spray rate and driving speed.
This system allows to widen the machine operating range, i.e. in the above instance, using ISO11002 yellow (**A**) and ISO110025 violet (**B**) nozzles, that work correctly at a speed from 5.5 km/h to 24.9 km/h.

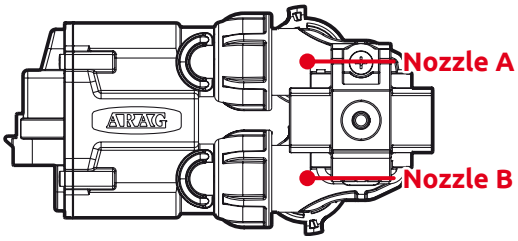


Fig. 248

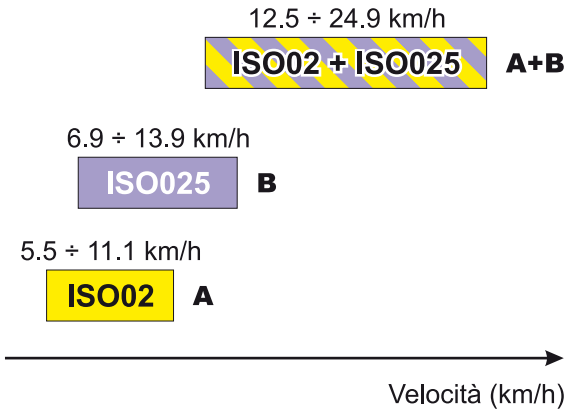


Fig. 249

According to the set data and those detected by the sensors, Bravo 400S selects the suitable nozzle configuration constantly checking that:
- the spraying pressure always remains within the job features set for each single nozzle;
- in case of many possible nozzle configurations, the operating pressure of the configuration in use is as close as possible to the operating range of the nozzle;
- required number of nozzle changes is as low as possible.

When setting a treatment, make sure to couple compatible nozzles.
For example:
- ***Compatible nozzles**: the rate at 1 bar of the ISO025 nozzle is LOWER than the rate at 5 bars of the ISO02 nozzle (Fig. 250).*
- ***NON compatible nozzles**: the rate at 1 bar of the ISO05 nozzle is HIGHER than the rate at 5 bars of the ISO02 nozzle (Fig. 251).*

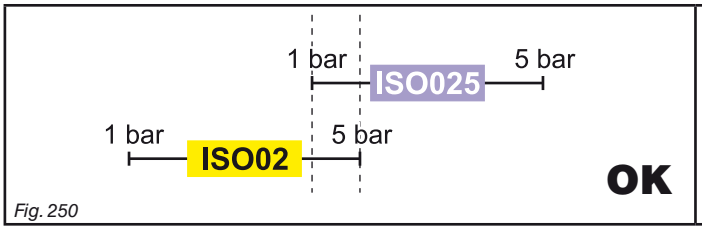


Fig. 250

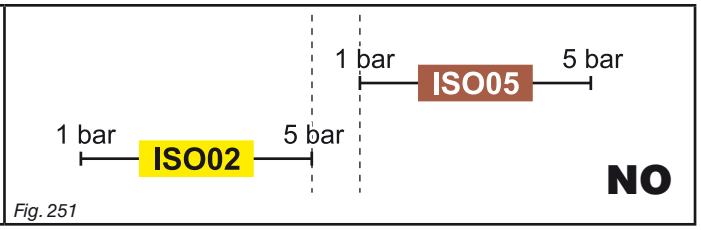


Fig. 251

In the same way, the overall rate of both nozzles at MINIMUM pressure shall be LOWER than the rate of the high rate nozzle at MAXIMUM pressure.

When setting the treatment (par.12.5) Bravo 400S automatically checks the rates and in case the above conditions are not respected, the computer will display the message Wrong nozzles configuration!

13.5 F4 Automatic nozzle selection ON/OFF

Enables / disables automatic nozzle selection on all spraying points *(DEFAULT: ON)*.

1 In the guidance screen, press **AUTO**.
2 Press **F4** (Fig. 252) to enable or disable automatic selection.

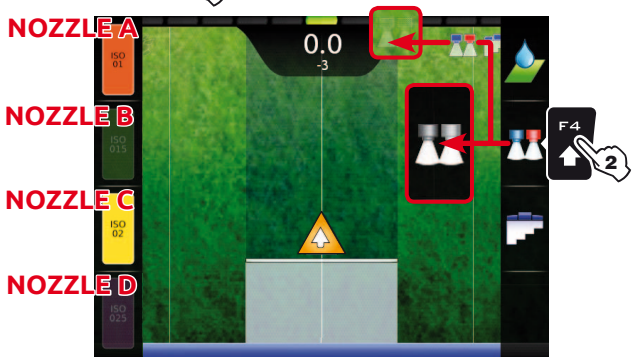


Fig. 252

Automatic selection ON

Automatic selection OFF

Enabled nozzle

Disabled nozzle

The number of nozzles displayed in **(par. 10.1.1) will vary according to the spraying point setting Fig. 252.**

13.6 F1/F3/F5/F7 Manual nozzle selection

Allows to select manually nozzles A, B, C, D in use on the spraying points.
This function is enabled ONLY when automatic nozzle selection is disabled (par. 13.5).

1 In the guidance screen, press **AUTO**.
2 Press **F4** to disable automatic nozzle selection (par. 13.5 **F4** Automatic nozzle selection ON/OFF).
3 Press the button next to the nozzle (Fig. 253) to enable or disable the corresponding nozzle.

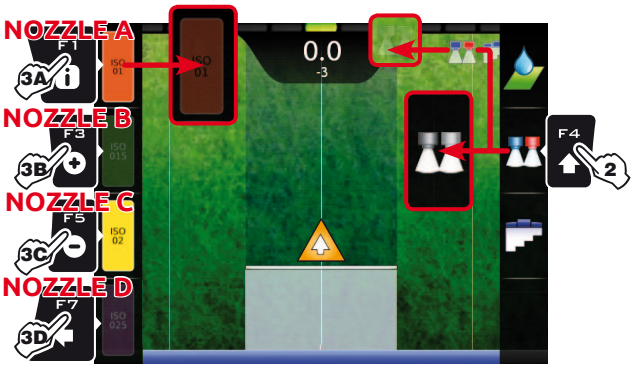
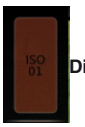


Fig. 253

Enabled nozzle



Disabled nozzle

The number of nozzles displayed in par. 10.1.1 will vary according to the spraying point setting Fig. 253.

13.7 Boom section management

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) section management is always MANUAL.

AUTOMATIC MANAGEMENT ON	AUTOMATIC MANAGEMENT OFF (MANUAL)
The section valves are closed or opened automatically.	Section valves must be opened or closed manually.

To change section valve management mode, use function F6 Automatic section management ON/OFF (par. 13.8).

TREATMENT AND BOOM SECTION STATUS

Main control **OFF**	Section **ON**	Zone to be sprayed **OPEN SECTION**	Zone already sprayed **CLOSE SECTION**

OPENING AND CLOSING SIGNALS

MANUAL SECTION MANAGEMENT

When overlapping is above the set value for the **Sections overlapping limit** (par. 10.1.12 / 10.2.2), Bravo 400S warns that the relevant sections must be CLOSED (Fig. 254). Close the section valve with the relevant switch: Bravo 400S will confirm closure on the display.
As the machine advances, the signal is triggered for each section.

When overlapping returns within acceptable levels, Bravo 400S signals that the relevant sections can be OPENED (Fig. 255).
Open the section valve with the relevant switch: Bravo 400S will confirm opening on the display. As the machine advances, the signal is triggered for each section.

Closing signal

Fig. 254

Opening signal

Fig. 255

AUTOMATIC SECTION MANAGEMENT

When overlapping of ONE or ALL boom sections is above the set value for the **Sections overlapping limit** (par. 10.1.12 / 10.2.2), Bravo 400S CLOSES the relevant sections (Fig. 256). It is not necessary to intervene on the switches.
Bravo 400S closes the sections automatically. Job interruption is shown on the display in real time.

When overlapping returns within the set limit, Bravo 400S opens the relevant sections automatically. Job resumption is shown on the display in real time (Fig. 257).

Automatic section closing

Fig. 256

Automatic section opening

Fig. 257

13.8 F6 Automatic section management ON/OFF

Enables / disables automatic boom section management *(DEFAULT: ON).*

1 In the guidance screen, press **AUTO**.
2 Press **F6** (Fig. 258) to enable or disable automatic management.

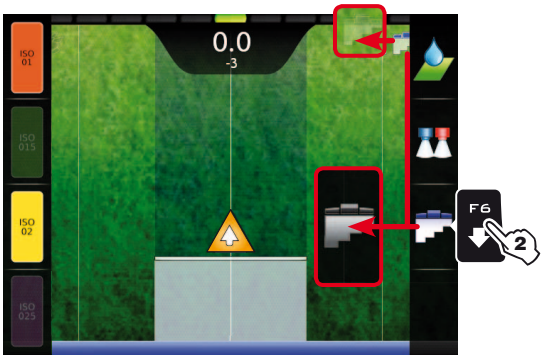
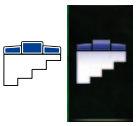
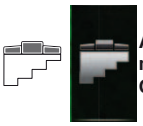


Fig. 258



Automatic section management ON

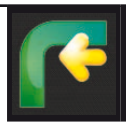


Automatic section management OFF

14 "HOME" MENU

Fig. 259

To enter the menu press the HOME key: once inside the menu, pressing each key will enable the corresponding function.
The table below sums up all menu items and corresponding keys:

Par.		
14.1		**Continue last job**
Continues last job		
14.3		**New job**
Starts a new job		
14.5		**Resume job**
Enables procedure for resuming a job		
10		
Selects / Creates settings for **User**, **Tractor** and **Implement**		

Par.		
14.2		**Save job**
Saves current job		
14.4		**Memories management**
Manages and copies data between internal and external memories (SD card, Pendrive)		
14.6		**Info / Alarms**
Job information / alarms		
10		
Edits settings for **User**, **Tractor** and **Implement**		

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

14.1 F1 Continue last job

Continues last job.

1 Press **F1** to continue the last job, from the point where it has been interrupted.

2 Check **Spraying settings** (**Target rate**, **Nozzles config**, **Map** in Fig. 261); change them if necessary.

3 Select and press **OK** to switch to guidance mode.

4 Complete the job (Fig. 262).

Fig. 260

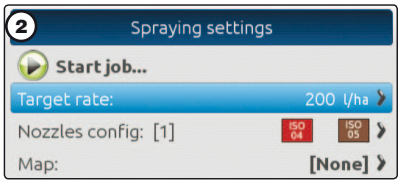


Fig. 261

Fig. 262

When the last job is resumed, Bravo 400S provides guidance information by restoring the conditions which were active at the time of interruption:
- Guidance mode
- Marking points A and B
- Marking points for surface calculation

14.2 F2 Save job

Saves current job

Fig. 263

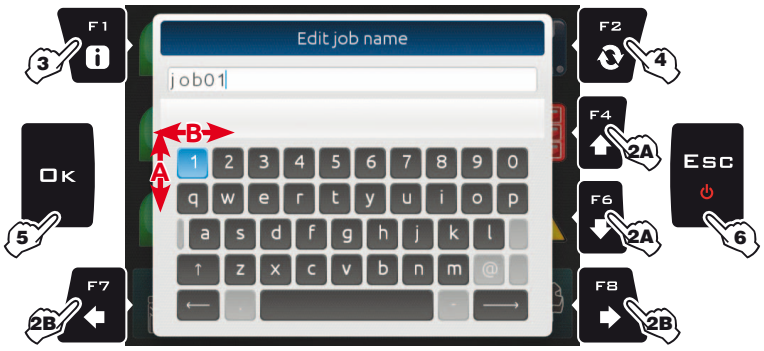


Fig. 264

1 Press **F2** to save current job: the name edit screen is displayed (Fig. 264). Type the name.
2A Press in succession to select the character you wish to type (UP / DOWN)
2B Press in succession to select the character you wish to type (RIGHT / LEFT).
3 Press to confirm the selected character.
4 Press to delete the character before the cursor.
5 Press to save the name
6 Press to exit screen without confirming modification

Legend:

job_01 Typed Name Cursor

9 Selected character

← → Shift cursor across name characters

↑ Caps lock

A confirmation message is displayed once the process is completed (Fig. 265). Press **ESC**.

Fig. 265

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) Value Increase / decrease | OK Confirm access or data change | Esc Exit function or data change | Par. 7.4

14.3 F3 New job

Starts a new job

1 Press **F3** to start a new job. Bravo 400S asks to save the current job (Fig. 266).
Press **OK** to continue without saving (**2A**) or **ESC** to interrupt the procedure and save (**2B**).

Fig. 266

IF AT THIS STAGE YOU CHOOSE TO CONTINUE WITHOUT SAVING (2A), ALL CURRENT JOB DATA WILL BE LOST.

2B The **ESC** key stops the beginning of a new job.
3B Save the previous job with the function **Save job** (par. 14.2).
Now start from point **1** to begin a new job.

Fig. 267

2A The **OK** key allows switching to the treatment start page without saving the job.

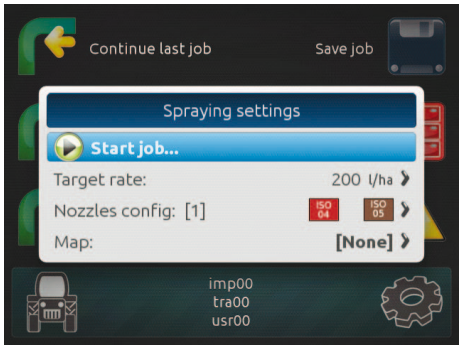


Fig. 268

Check **Spraying settings**
(**Target rate**, **Nozzles config**, **Map** in Fig. 268);
change them if necessary.

CONTINUES

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

14.4 F4 Memories management

Manages and copies data between internal and external memories (SD card, Pendrive)

Allows to upload, save and/or delete the data memorized on Bravo 400S or on an external memory (SD card / Pendrive);
said data concern jobs carried out, maps or machine configurations. The operations that can be carried out will be illustrated in the following paragraphs.

Fig. 269

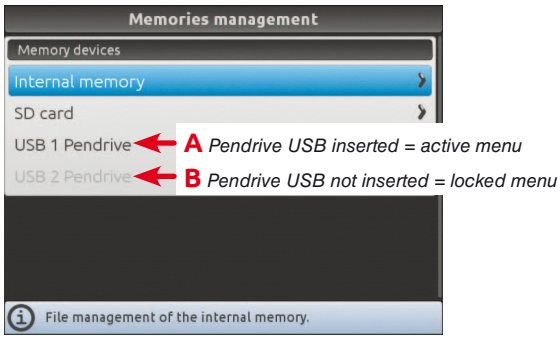


Fig. 270

CONTINUES

14.4.1 Internal memory

Allows to transfer the saved data concerning **Implements**, **Tractors**, **Users**, **Jobs** or **Maps**, from the internal memory of Bravo 400S onto an "external" support (SD card or USB pendrive).
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 272).

1 Press F4 to enter **Memories management**.
2 Select the **Internal memory** menu and press OK.
3 Select **Implements** (Fig. 272) and press OK.
4 In the list of memorized names select the desired implement (Fig. 273) and press OK.

A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 273). These will be described below.

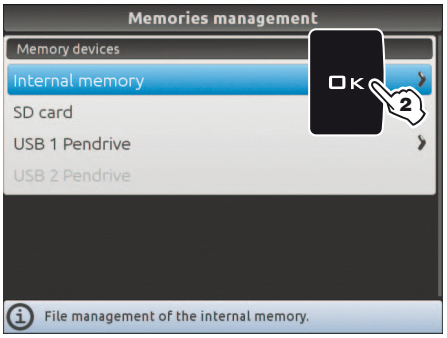


Fig. 271

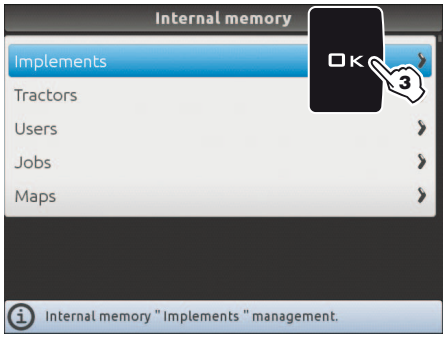
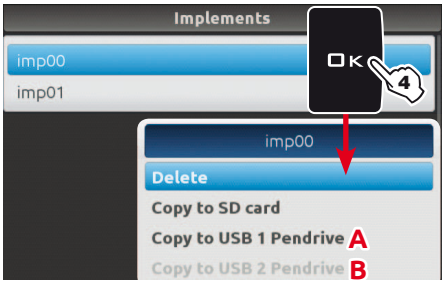


Fig. 272



A *Pendrive USB inserted = active action*
B *Pendrive USB not inserted = locked action*

Fig. 273

• Delete

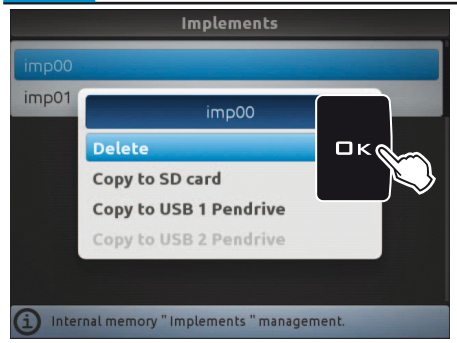


Fig. 274

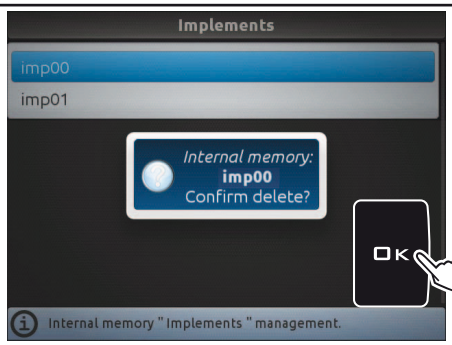


Fig. 275

Allows to delete data from Bravo 400S internal memory.

- Select **Delete** (Fig. 274) and press OK.
- The message in Fig. 275 is displayed: confirm deletion by pressing OK again.

• Copy to SD card

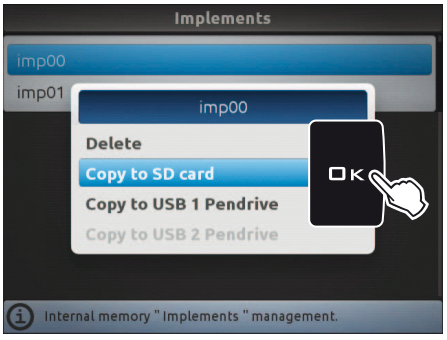
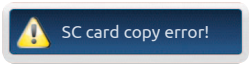


Fig. 276

Allows to copy data from Bravo 400S internal memory onto a SD card.
- Select the item **Copy to SD card** (Fig. 276) and press OK;

ERROR MESSAGES

A file with the same name already exists on the SD card.
You can do the following:
- Press OK to replace the file.
WARNING: ALL data in the replaced file will be lost.
- Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.



- There is no more space available on the SD card:
delete a few files from the memory and try saving again
(par. 14.4.2 - **SD card > Implements > Delete**).
- The SD card is locked.
Remove the protection and try saving again.

• Copy to USB Pendrive (1 or 2)

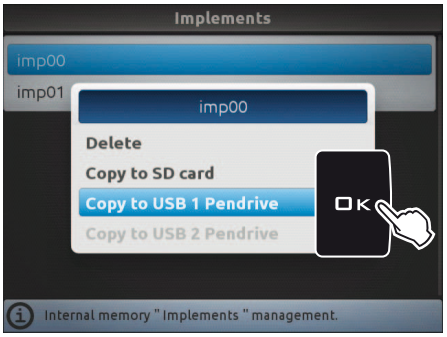


Fig. 277

Allows to copy data from Bravo 400S internal memory onto a pendrive.
- Select the item **Copy to USB Pendrive** (Fig. 277) and press OK;

ERROR MESSAGES

A file with the same name already exists on the pendrive.
You can do the following:
- Press OK to replace the file.
WARNING: ALL data in the replaced file will be lost.
- Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.

- There is no more space available on the pendrive.
delete a few files from the memory and try saving again
(par. 14.4.3 - **USB Pendrive > Implements > Delete**).
- The pendrive is locked.
Remove the protection and try saving again.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

14.4.2 SD card

Allows to transfer the saved data concerning **Implements**, **Tractors**, **Users**, **Jobs** or **Maps**, from the SD card onto the internal memory of Bravo 400S.
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 279).

1 Press F4 to enter **Memories management**.
2 Select the **SD card** menu and press OK.
3 Select **Implements** (Fig. 279) and press OK.
4 In the list of memorized names select the desired implement (Fig. 280) and press OK.

A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 280). These will be described below.

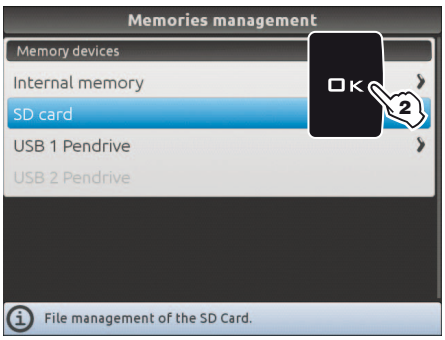


Fig. 278

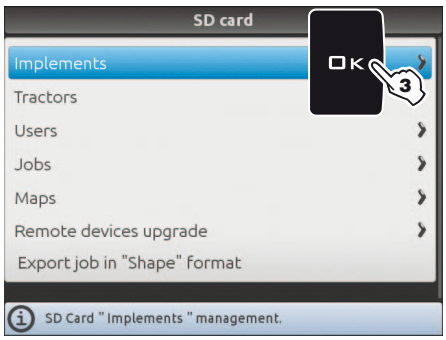


Fig. 279

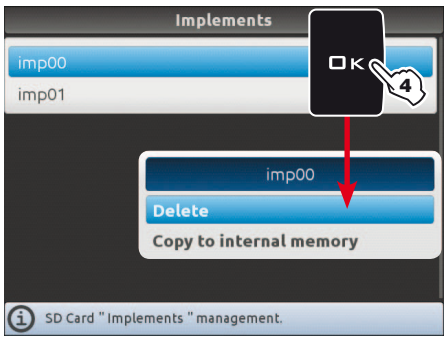


Fig. 280

• Delete

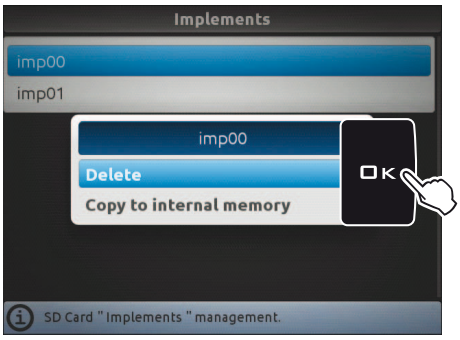


Fig. 281

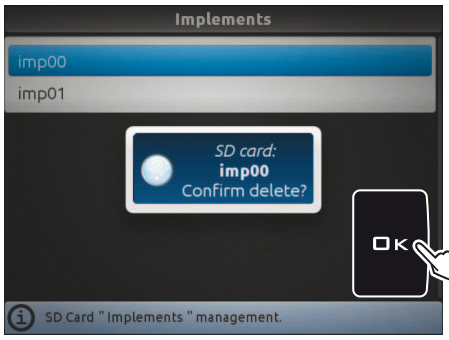


Fig. 282

Allows to delete data from the SD card.

- Select **Delete** (Fig. 281) and press OK.
- The message in Fig. 282 is displayed: confirm deletion by pressing OK again.

• Copy to internal memory

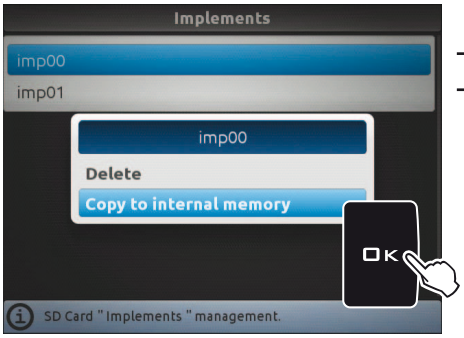


Fig. 283

Allows to copy data from the SD card onto Bravo 400S internal memory.
- Select the item **Copy to internal memory** (Fig. 283) and press OK;

ERROR MESSAGES

Fig. 284

A file with the same name already exists on the internal memory.
You can do the following:
- Press OK to replace the file.
WARNING: ALL data in the replaced file will be lost.
- Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.

CONTINUES

• Remote devices upgrade

Allows to upgrade the software of the devices connected to Bravo 400S: Seletron RCU (control unit), hydraulic RCU, switch box, etc.

Before starting the procedure copy the upgrade files onto the SD card.

- Insert the SD card in a card reader and connect it to the computer. The window to the right will appear: select **Open folder to view the files**.
- The SD card explorer window will open: create a new folder and name it "**s19**"

AutoPlay
Disco rimovibile (G:)
Opzioni generali
Apri cartella per visualizzare i file
utilizzando Esplora risorse
Visualizzare ulteriori opzioni di AutoPlay nel Pannello di controllo

Fig. 285

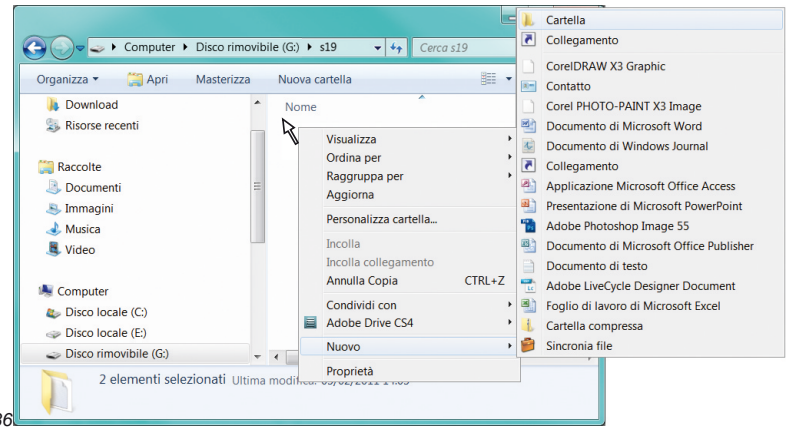


Fig. 286

- Select the upgrade file and drop it onto the SD card explorer window, in the folder named "**s19**".
- Insert the SD card in its slot on Bravo 400S.

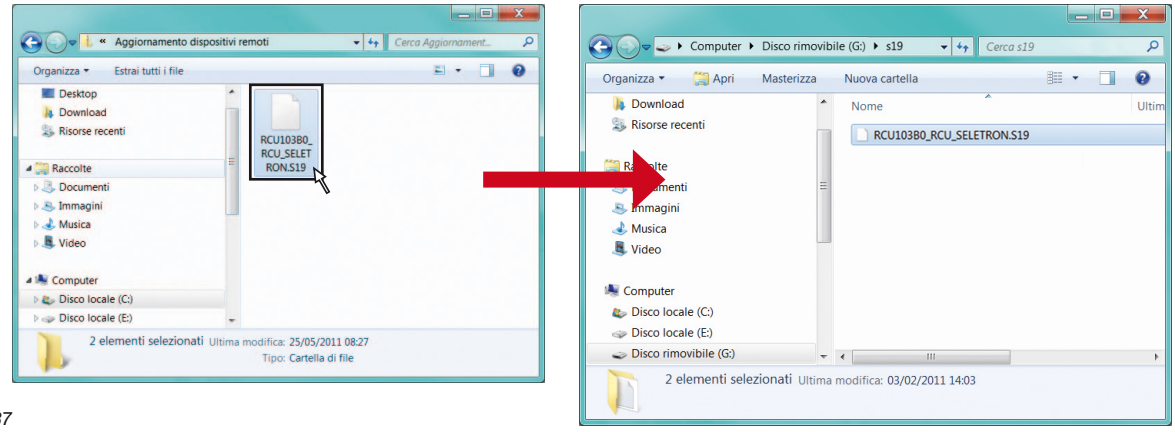


Fig. 287

CONTINUES

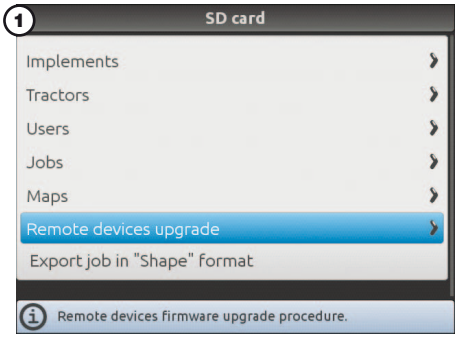


Fig. 288

1 Select the **Remote devices upgrade** menu and press OK.

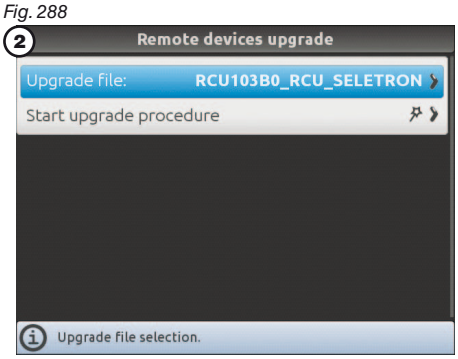


Fig. 289

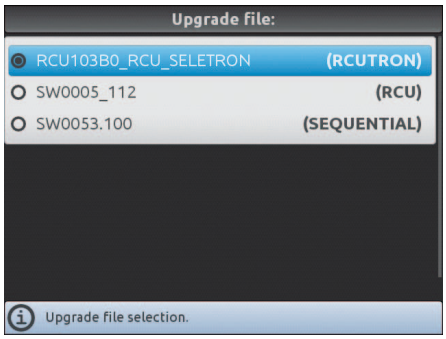


Fig. 290

2 Enter the **Upgrade file** menu, select the desired file from the list (Fig. 290) and press OK.

Available upgrades:
• RCUTRON:
Seletron RCU upgrade
• RCU:
Hydraulic RCU upgrade
• SEQUENTIAL:
sequential control switches upgrade

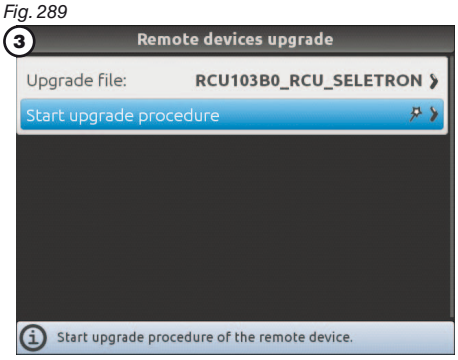


Fig. 291

Programming remote device
File: RCU103B0_RCU_SELETRON (RCUTRON)
Press OK to start remote devices upgrade procedure.
Press Esc to stop remote device upgrade procedure.

Fig. 292

3 Now select **Start upgrade procedure** and press OK.
Follow the instructions on the display and start the setup procedure (Fig. 292).

Fig. 293

- When the message in Fig. 293 appears, the upgrade is complete.
Press OK.

• Export job in "Shape" format

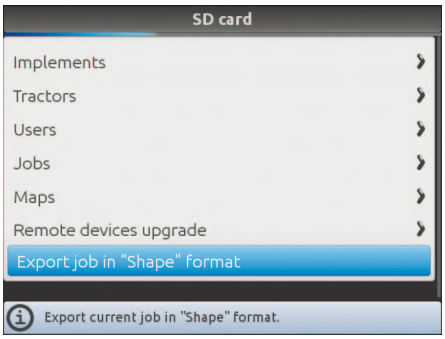


Fig. 294

Allows to memorize job data onto a map, saving it onto the SD card.
Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select **Export job in "Shape" format** (Fig. 294) and press OK.
- A confirmation message appears once the process is completed. Press OK.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

14.4.3 USB Pendrive

Allows to transfer the saved data concerning **Implements**, **Tractors**, **Users**, **Jobs** or **Maps**, from the pendrive onto Bravo 400S internal memory.
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 296).

1 Press F4 to enter **Memories management**.
2 Select the **USB Pendrive** menu and press OK.
3 Select **Implements** (Fig. 296) and press OK.
4 In the list of memorized names select the desired implement (Fig. 297) and press OK.

A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 297). These will be described below.

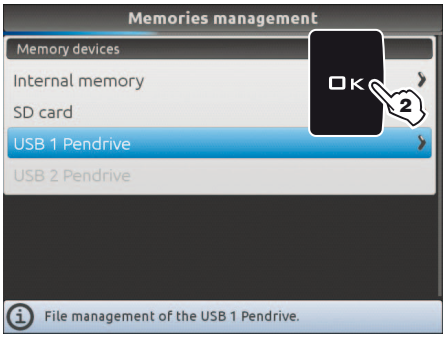


Fig. 295

Fig. 296

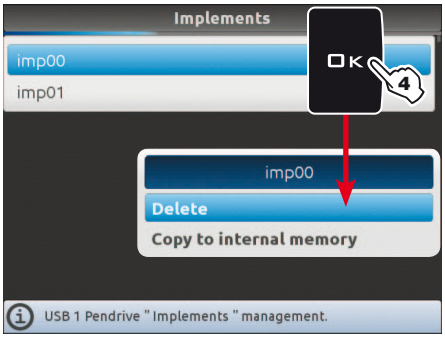


Fig. 297

• Delete

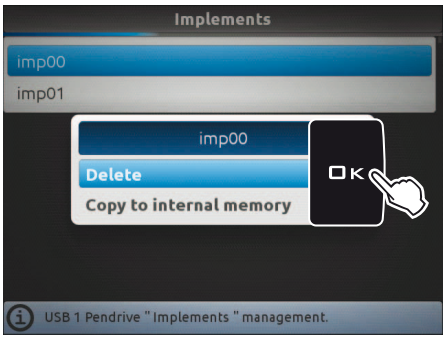


Fig. 298

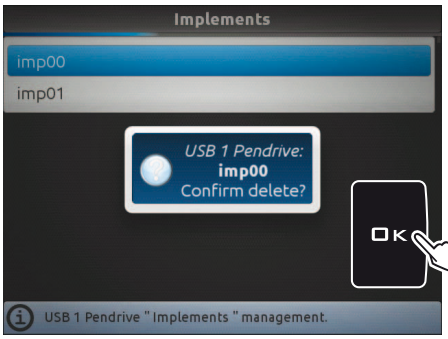


Fig. 299

Allows to delete data from the pendrive.

- Select **Delete** (Fig. 298) and press OK.
- The message in Fig. 299 is displayed: confirm deletion by pressing OK again.

• Copy to internal memory

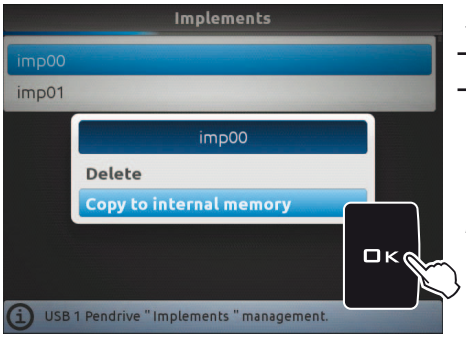


Fig. 300

Allows to copy data from the pendrive onto Bravo 400S internal memory.
- Select the item **Copy to internal memory** (Fig. 300) and press OK;

ERROR MESSAGES

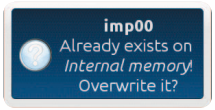


Fig. 301

A file with the same name already exists on the internal memory.
You can do the following:
- Press OK to replace the file.
WARNING: ALL data in the replaced file will be lost.
- Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.

CONTINUES

• Remote devices upgrade

Allows to upgrade the software of the devices connected to Bravo 400S: Seletron RCU (control unit), hydraulic RCU, switch box, etc.

Before starting the procedure copy the upgrade files onto the pendrive.

- Insert the pendrive in a pendrive reader and connect it to the computer. The window to the right will appear: select **Open folder to view the files**.
- The pendrive explorer window will open: create a new folder and name it "**s19**"

AutoPlay
Disco rimovibile (G:)
Opzioni generali
Apri cartella per visualizzare i file
utilizzando Esplora risorse
Visualizzare ulteriori opzioni di AutoPlay nel Pannello di controllo

Fig. 302

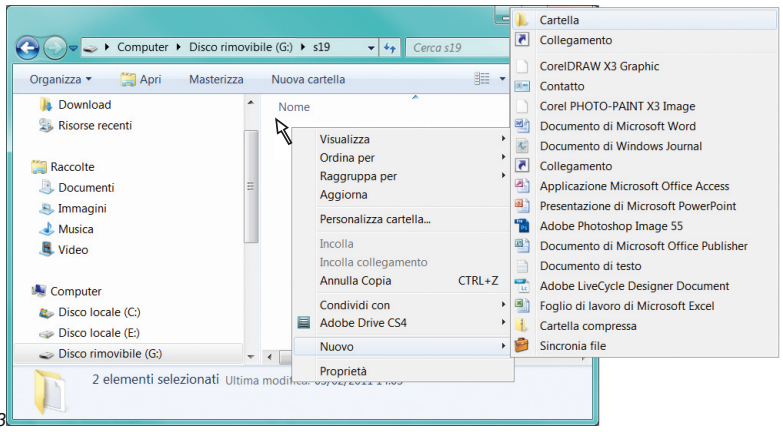


Fig. 303

- Select the upgrade file and drop it onto the pendrive explorer window, in the folder named "**s19**".
- Insert the SD card in its slot on Bravo 400S.

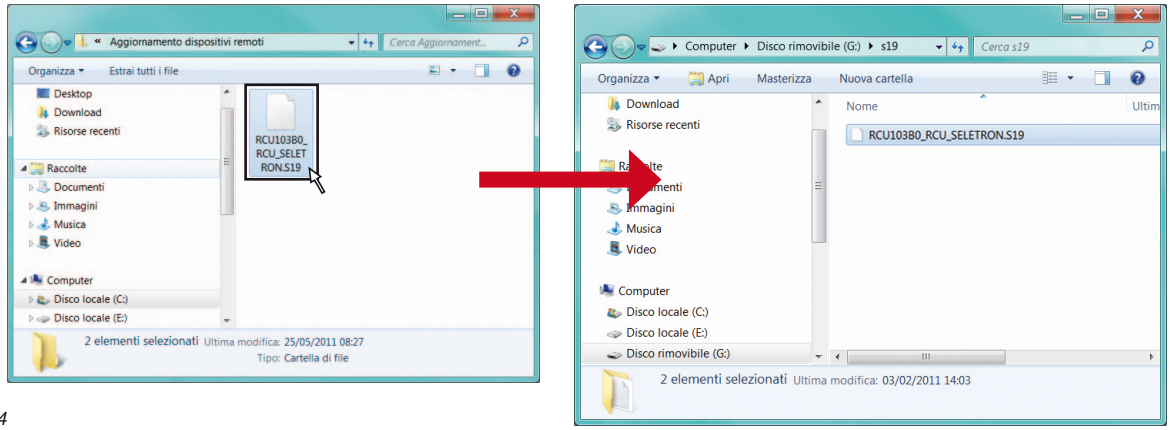


Fig. 304

CONTINUES

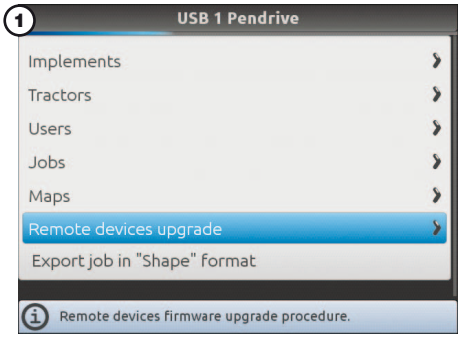


Fig. 305

1 Select the **Remote devices upgrade** menu and press OK.

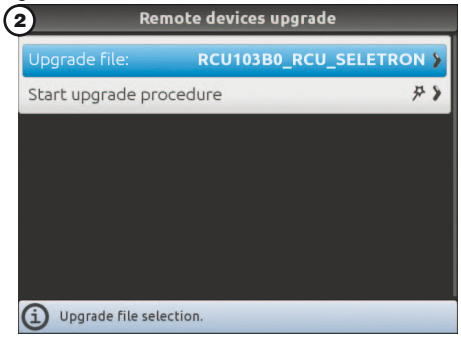


Fig. 306

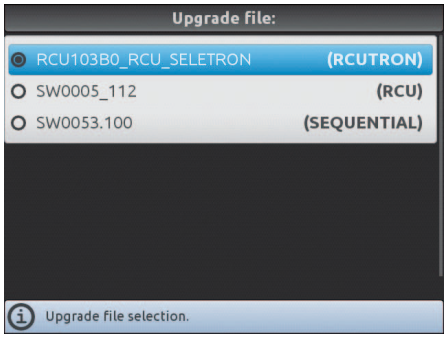


Fig. 307

2 Enter the **Upgrade file** menu, select the desired file from the list (Fig. 307) and press OK.

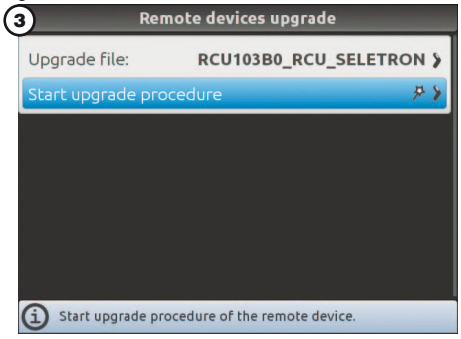


Fig. 308

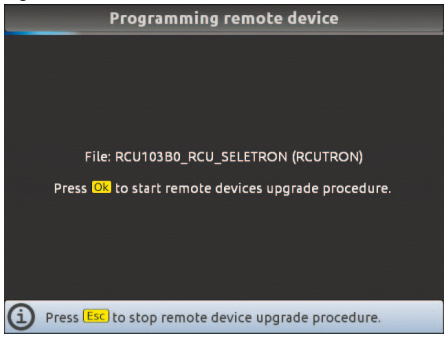

Programming remote device
File: RCU103B0_RCU_SELETRON (RCUTRON)
Press OK to start remote devices upgrade procedure.
Press Esc to stop remote device upgrade procedure.

Fig. 309

3 Now select **Start upgrade procedure** and press OK.
Follow the instructions on the display and start the setup procedure (Fig. 309).

Fig. 310

4 When the message in Fig. 310 appears, the upgrade is complete.
Press OK.

• Export job in "Shape" format

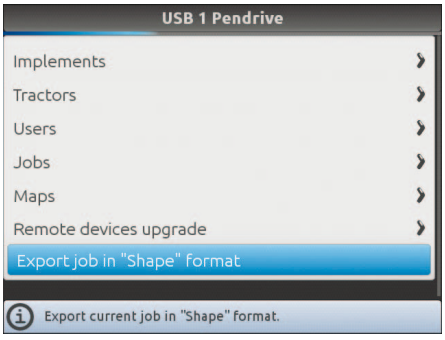


Fig. 311

Allows to memorize job data onto a map, saving it onto the pendrive.
Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select **Export job in "Shape" format** (Fig. 311) and press OK.
- A confirmation message appears once the process is completed. Press OK.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | Esc Exit function or data change | Par. 7.4

14.5 F5 Resume job

Enables procedure for resuming a previously interrupted job.

1 Press **F1** to resume a previous job, from the list of saved jobs.

2 In the list, select the desired configuration (Fig. 312) and press **OK** to confirm.

3 Check **Spraying settings** (**Target rate**, **Nozzles config**, **Map** in Fig. 313); change them if necessary.

4 Select and press **OK** to switch to guidance mode.

5 Complete the job (Fig. 314).

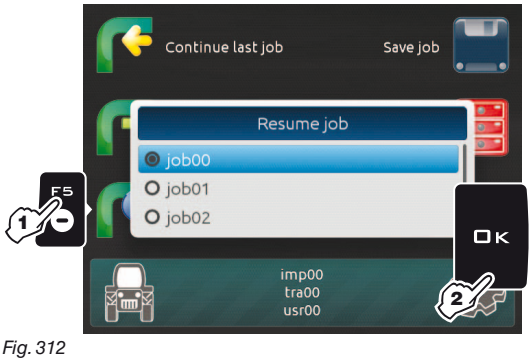


Fig. 312

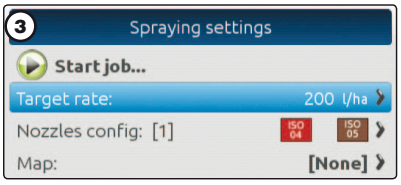


Fig. 313

Fig. 314

When the last job is resumed, Bravo 400S provides guidance information by restoring the conditions which were active at the time of saving:
- Guidance mode
- Marking points A and B
- Marking points for surface calculation

14.6 F6 Info / Alarms

Displays job information / alarms.

Fig. 315

Fig. 316

1 Press F6 to view the **Info / Alarms** menu (Fig. 316).
This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

A description of the selected notification is shown at the bottom of the display.

15 JOB MENU

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the menu contains a limited amount of items.

To access job menu start a job (**New job**, **Resume job**, **Continue last job**, chap. 14 "Home" Menu);
in the guidance screen press MENU.
In the job menu (Fig. 317), pressing any key at the side will enable the relevant function.

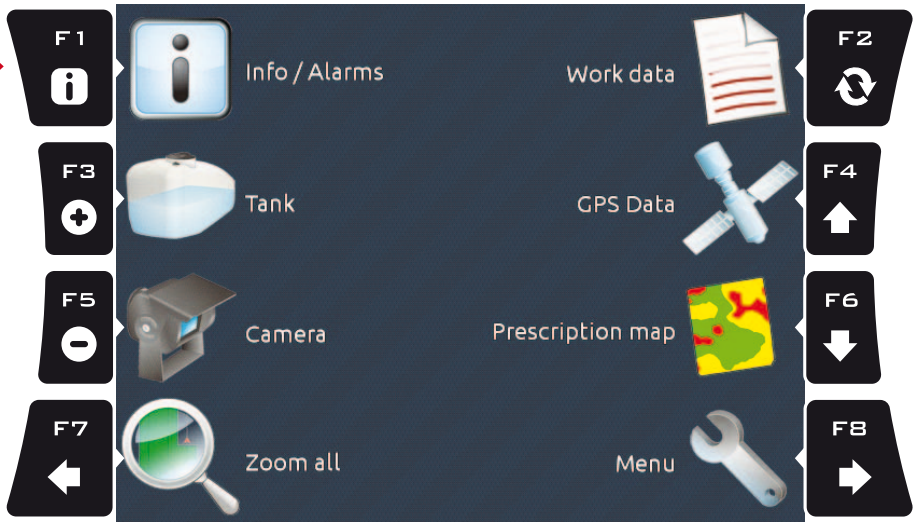
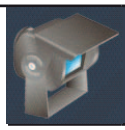
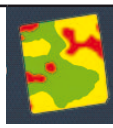


Fig. 317

The table sums up all menu items and corresponding keys:

Par.		
15.1	F1 **Info / Alarms**	Displays job information / alarms
15.2	F2 **Work data**	Displays job data
15.3	F3 **Tank**	Tank filling management
15.4	F4 **GPS data**	Displays GPS data
15.5	 F5 **Camera**	Displays images from connected cameras
15.6	 F6 **Prescription map**	Overview of the prescription map in use
15.7	F7 **Zoom all**	Overview of the field during spraying
15.8	F8 **Menu**	Job settings menu

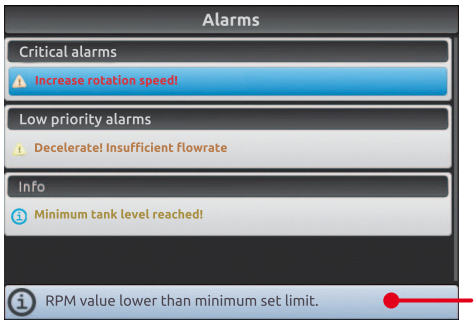
F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

15.1 F1 Info / Alarms

Displays job information / alarms

1 In the guidance screen, press MENU.
2 Press F1 to view the **Info / Alarms** menu (Fig. 319).
This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

Fig. 318



A description of the selected notification is shown at the bottom of the display.

Fig. 319

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | Esc Exit function or data change | Par. 7.4

15.2 F2 Work data

Displays job data

1 In the guidance screen, press **MENU**.
2 Press **F2** to view job data (Fig. 321 and Fig. 322).
3 Press **F4** / **F6** to scroll data.

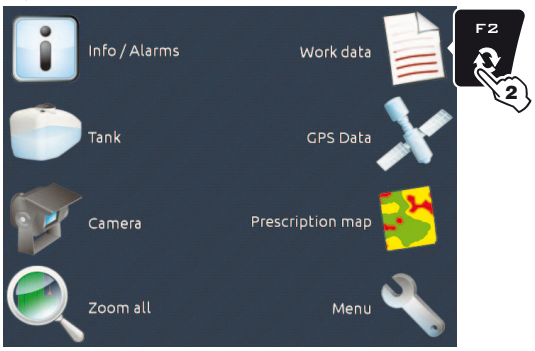


Fig. 320

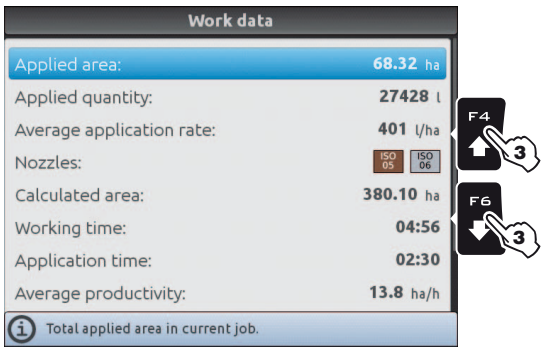


Fig. 321

A description of the selected data is shown at the bottom of the display.

Fig. 322

The data and unit of measurement shown are listed in par. 18.1.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

15.3 F3 Tank

Manages tank filling.

1 In the guidance screen, press **MENU**.
2 Press **F3** to view the **Tank** menu (Fig. 324).

Fig. 323

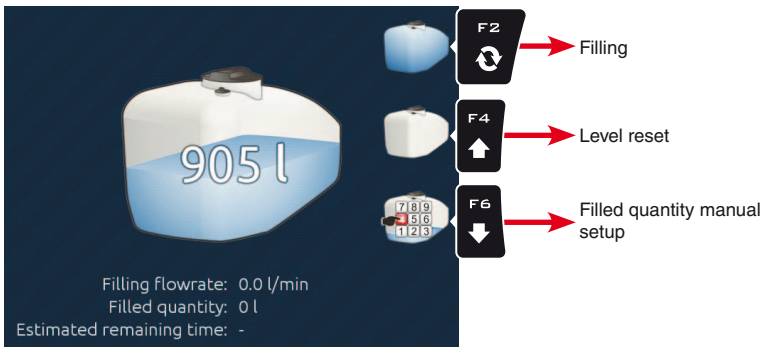


Fig. 324

In this screen it is possible to enable several procedures:
- Filling (Fig. 325)
- Level reset (Fig. 326)
- Filled quantity manual setup (Fig. 327)

When the filling flowmeter is connected, the display shows the filling data in real time.

TANK FILLING

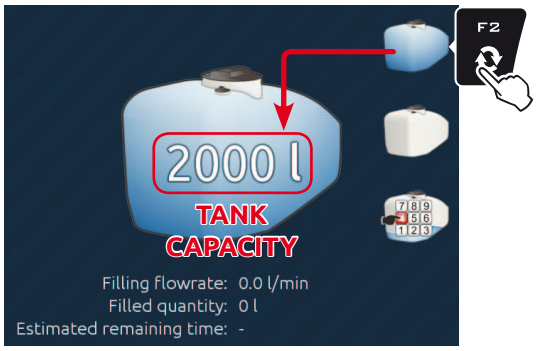


Fig. 325

Press **F2** to set tank level to the maximum value.
The display will show the tank as full: its total capacity has been set during advanced setup (par. 10.1.10).

LEVEL RESET

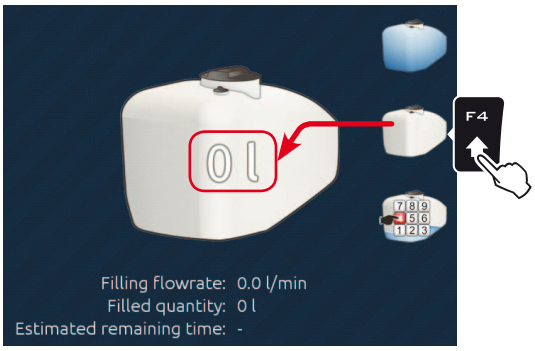


Fig. 326

Press **F4** to set tank level to zero.
The display will show the tank as empty.

FILLED QUANTITY MANUAL SETUP

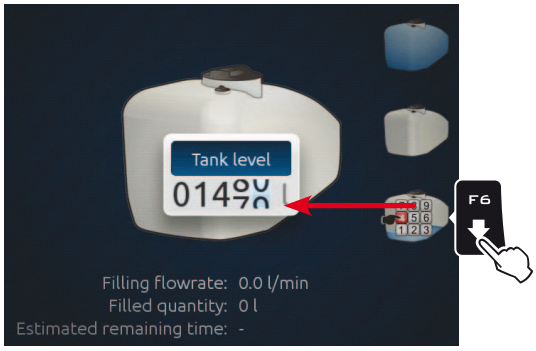


Fig. 327

- Press **F6** to set the quantity of liquid filled in the tank.
- Set the value and confirm.

The display will show the tank level that has been reached.

It is not possible to set values higher than tank total capacity.

15.4 F4 GPS Data

Displays GPS data

1 In the guidance screen, press **MENU**.
2 Press **F4** to view the **GPS Data** menu (Fig. 329).
This screen shows the data sent to the GPS receiver.

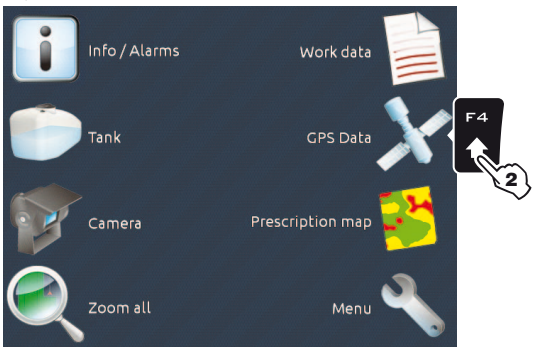
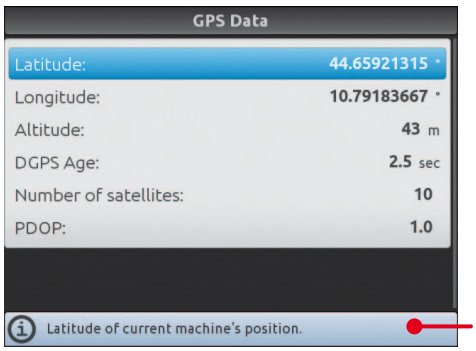


Fig. 328



A description of the selected data is shown at the bottom of the display.

Fig. 329

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

15.5 F5 Camera

Displays images from connected cameras

1 In the guidance screen, press **MENU**.
2 Press **F5** to view the **Camera** menu (Fig. 331).
By connecting one or more cameras, it is possible to monitor working areas and at the same time view spraying data.

Enable camera view during advanced setup (par. 10.3.3).

Fig. 330

F2 Switch view between the two cameras
F7 Select job data displayed on the LEFT side of the screen.
F8 Select job data displayed on the RIGHT side of the screen.

Fig. 331

15.6 F6 Prescription map

Overview of the prescription map in use

1 In the guidance screen, press **MENU**.
2 Press **F6** to view the **Prescription map** menu (Fig. 333).
From this screen it is possible to view data of the prescription map during spraying and to check the position of the machine on the map.

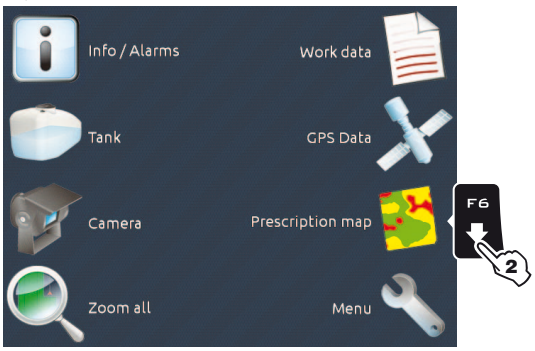


Fig. 332

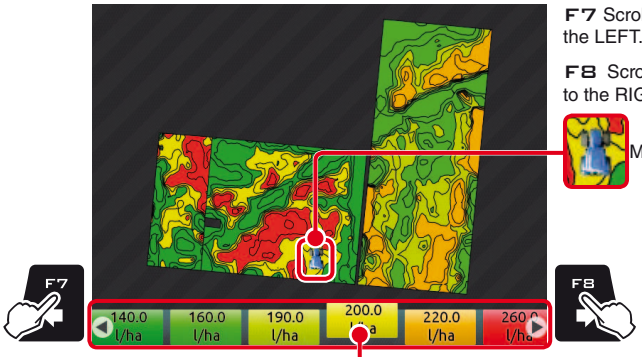


Fig. 333

F7 Scroll spray rate values to the LEFT.

F8 Scroll spray rate values to the RIGHT.

Machine position

Spray rate values legend:
The highlighted box displays the spray rate referred to the machine's current position

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

15.7 F7 Zoom all

Overview of the field during spraying

1 In the guidance screen, press MENU.
2 Press F7 to view the **Zoom all** menu (Fig. 335).

Fig. 334

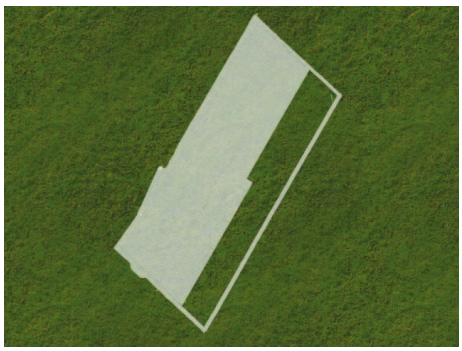


Fig. 335

15.8 F8 Menu

Job settings menu

1 In the guidance screen, press **MENU**.
2 Press **F8** to view the **Menu Settings** menu (Fig. 337).

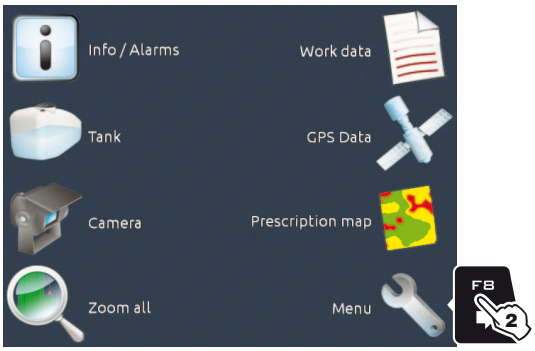


Fig. 336

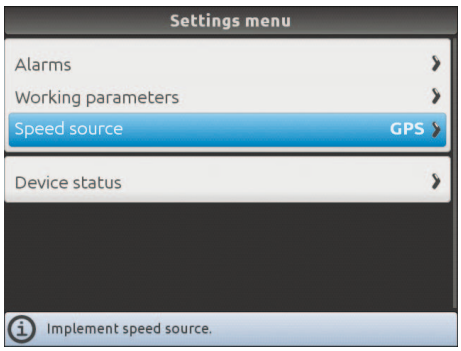


Fig. 337

In this screen it is possible to access several different menus, which can be useful during spraying:
- **Alarms** (par. 10.1.11).
- **Working parameters** (par. 10.1.12).
- **Device status** (par. 10.6).

15.8.1 Speed source

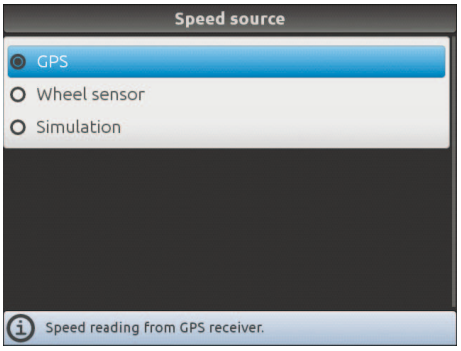


Fig. 338

Allows to select the source for speed calculation. Available options:

• GPS

Information concerning speed is received by the GPS, which is connected directly to Bravo 400S.

• Wheel sensor

When this option is enabled, the speed is calculated on the basis of the pulses received by the speed sensor installed on the wheel.

WARNING: guidance information and all accessory functions (surface calculation, alignment, etc.) are disabled.

The wheel constant must be entered during the setup procedure (par. 10.1.8).

• Simulation

Allows to enable speed simulation in order to carry out adjustment tests even when the machine is stationary.

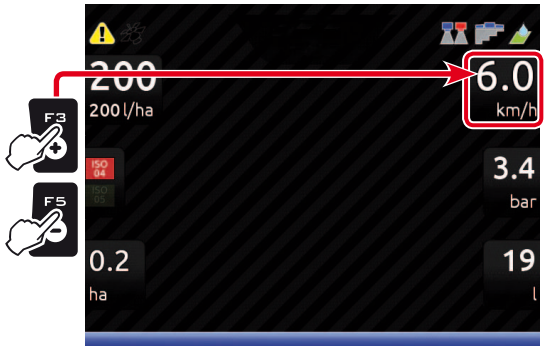


Fig. 339

Edit simulation speed *(DEF 6.0 km/h - 3.7 MPH)*:
F3 (+) increase, **F5** (-) decrease

WARNING: guidance information and all accessory functions (surface calculation, alignment, etc.) are disabled.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

16 JOB FUNCTIONS

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) job functions are limited.

To access job functions start a job (**New job**, **Resume job**, **Continue last job**, chap. 14 "Home" Menu);
in the guidance screen press FUNC.
When the list is active (Fig. 340), pressing the key at the side will enable the relevant function.

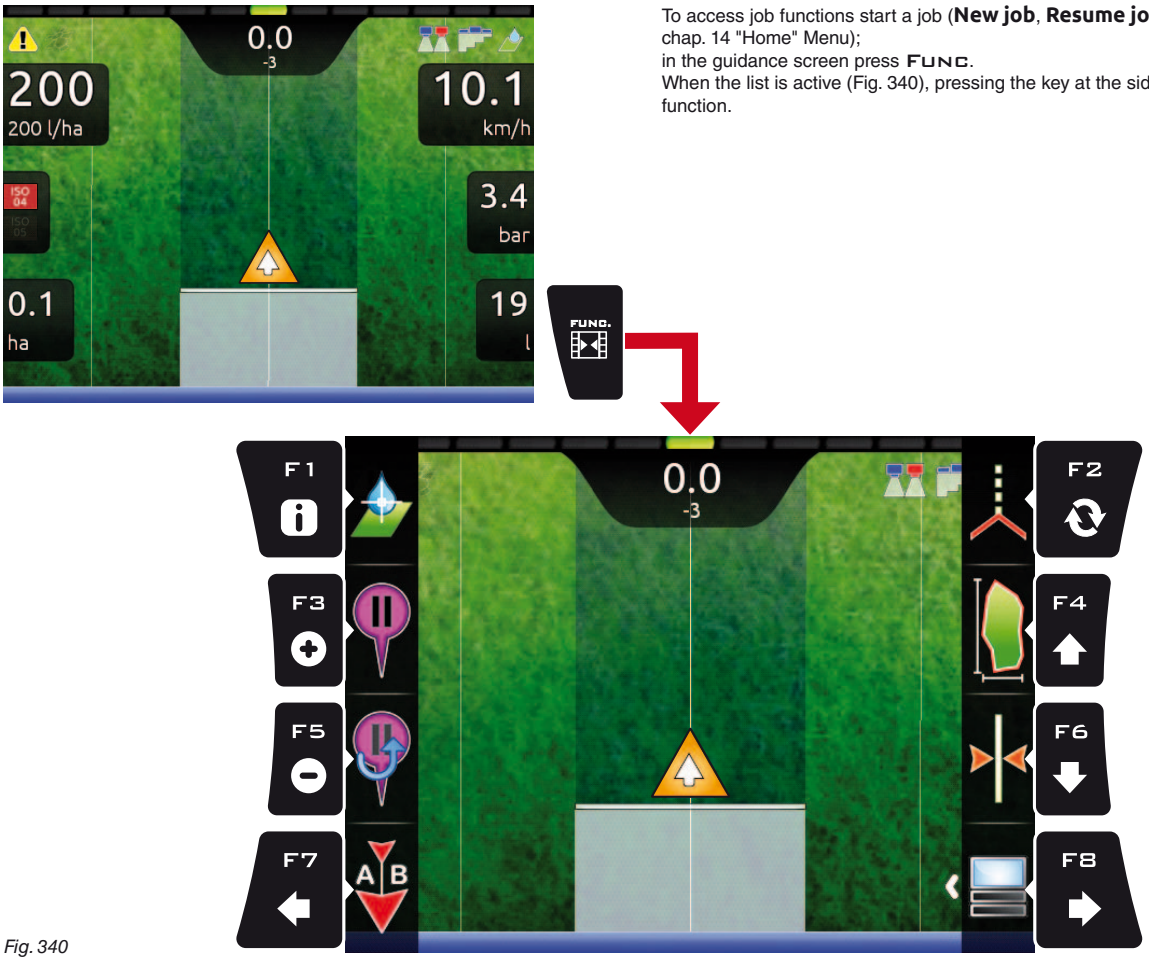


Fig. 340

The table below lists all available job functions and the corresponding function keys:

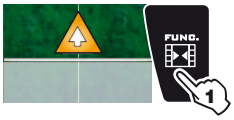
Par.		
16.1		**Spray rate** Change spray rate
16.3		**Pause** Save job breaking point
16.5		**Resume from pause** Guidance indications to return to job breaking point
16.7	A B	**New AB** Create a new AB track

Par.		
16.2		**Guidance mode** Select guidance mode
16.4		**Surface** Calculate field surface
16.6		**Align** Align to nearest track
16.8		**Display** Display options Includes several functions: F2 Tractor themes F4 Spraying themes F6 Daytime/ night time display mode F8 2D / 3D display mode

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

16.1 F1 Spray rate

Change spray rate



1 In the guidance screen, press **FUNC**.
2 Press **F1** to enable the function.
3 Change the spray rate value for the job (Fig. 342).
4 Confirm the data.

Fig. 341

Fig. 342

16.2 F2 Guidance mode

Selecting guidance mode

1 In the guidance screen, press **FUNC**.
2 Press **F2** to enable the function.
3 Select a guidance mode (Fig. 344): press **F4** and **F6** to move across the available items (**A - Straight guidance mode**, **B - Curved guidance mode** or **C - Free guidance mode**)
4 Confirm selection.

Fig. 343

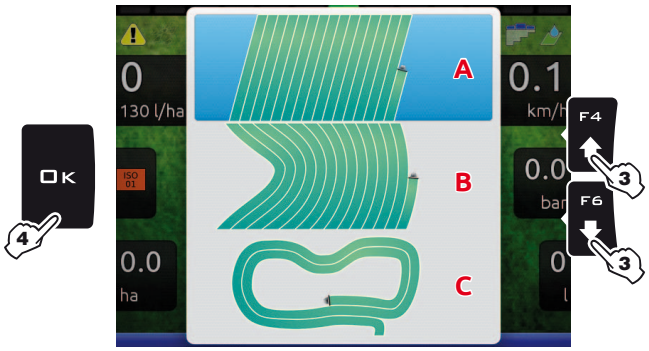


Fig. 344

A - STRAIGHT GUIDANCE MODE

Fig. 345

The tracks appearing on the display, which will act as a guidance reference, are perfectly straight and parallel to the reference line joining point A to point B as previously marked.
Any bends in the trajectory between **A** and **B** will be ignored.

B - CURVED GUIDANCE MODE

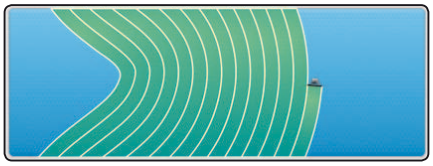


Fig. 346

The tracks appearing on the display, which will act as a guidance reference, include portions that are not straight, but do not include sharp bends (Fig. 348).
The trajectory between **A** and **B** will be saved and Bravo 400S will create evenly distributed tracks.

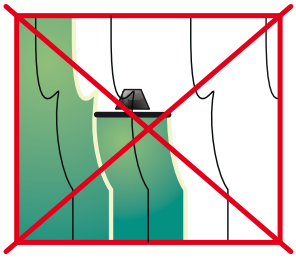


Fig. 348

C - FREE GUIDANCE MODE

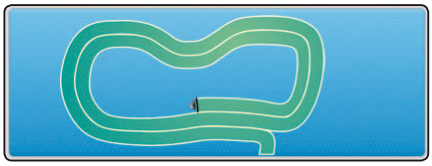


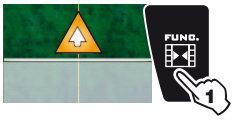
Fig. 347

No guidance references are shown on the display. The operator will drive freely and will be able to check the spraying range on the display in real time.

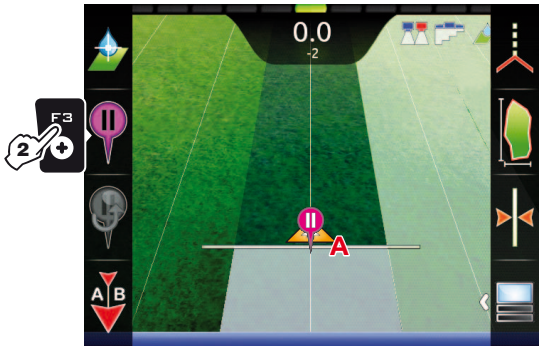
F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | Esc Exit function or data change | Par. 7.4

16.3 F3 Pause

Saves job breaking point, which will be shown on the display with the symbol .



1 In the guidance screen, press **FUNC**.
2 Press **F3** when you are in the position you wish to save (**A** in Fig. 349):
The symbol will be placed exactly on that point.



Bravo 400S can save ONLY ONE BREAKING POINT:
every time you save a point, the previous one will be deleted.

Fig. 349

16.4 F4 Surface

Enables the procedure to calculate field surface by driving along its perimeter.

1 In the guidance screen, press **FUNC**.
2 Press **F4** to start the surface calculation procedure (function list disappears).
The following message will appear: **Field edge side selection** prompting the operator to select which side of the machine to use as a reference to define the field perimeter.
3 Press **F3** (*Left*) or **F4** (*Right*): a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 351).

Fig. 350

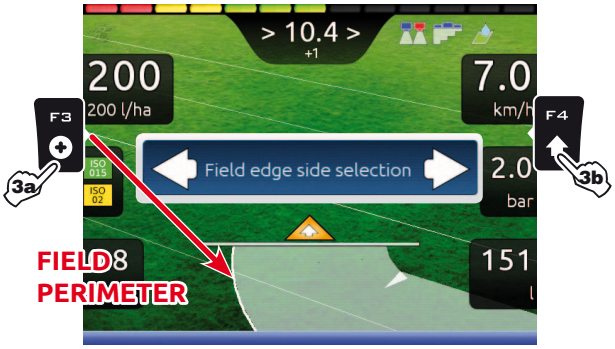


Fig. 351

4 Drive along the perimeter of the field or of the surface you wish to measure. When you get close to the calculation starting point, press **FUNC** again.
5 Press **F4** to complete the surface calculation procedure (Fig. 352). The computer will connect starting and end points and will calculate the surface.
6 To view **Calculated area**, press **MENU** followed by **F2** (access to the **Work data** screen, par. 15.2).

Fig. 352

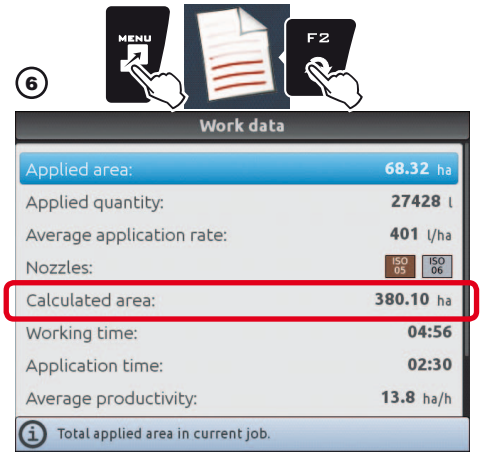


Fig. 353

FIELD PERIMETER ON MACHINE LEFT-HAND SIDE

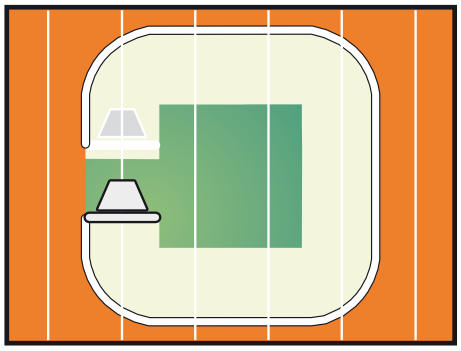


Fig. 354

FIELD PERIMETER ON MACHINE RIGHT-HAND SIDE

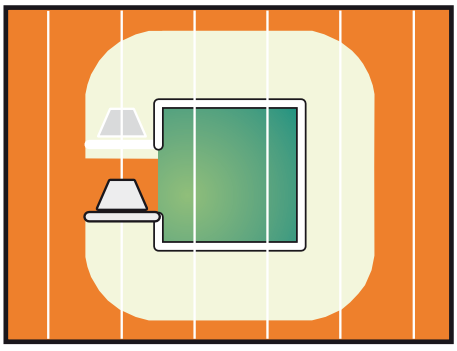


Fig. 355

The field external edge (white line) follows the trajectory of the most external open section valve. When all section valves are closed, the field edge starts from the boom center.

16.5 F5 Resume from pause

Guidance indications to return to job breaking point , previously saved with function **F3 Pause** (par. 16.3).

1 In the guidance screen, press **FUNC**.
2 Press **F5** to obtain guidance information and enable the return to job breaking point procedure.
The fuchsia line **B** in Fig. 356 (which connects the position of the machine to that of the breaking point) shows the direction to be followed to reach the point marked as **A**.
The display shows in fuchsia the distance between your position and the breaking point (**C** in Fig. 356).
3 Continue driving and make sure that the distance is decreasing: you are reaching the breaking point.
When you are close to it, you can see it on the display.
4 Once you have reached the position, the value of the distance reaches "zero" (Fig. 357): press **OK** or **ESC** to exit the procedure.

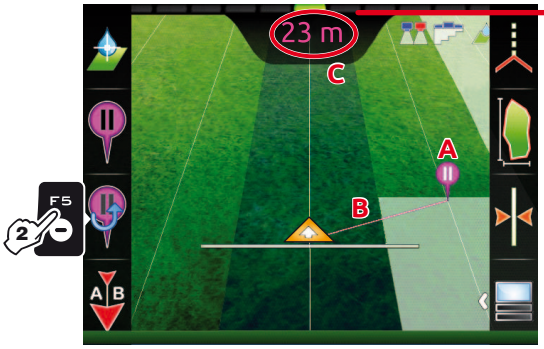


Fig. 356

Fig. 357

OK *Bravo 400S goes back to displaying guidance information for the job and the symbol is erased.*

ESC *Bravo 400S goes back to displaying guidance information for the job but the symbol is saved.*

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

16.6 F6 Align

Moves the closest reference track, re-aligning it to the position of the machine.
This function is useful when you need to re-align the machine, whilst continuing to drive in the same direction (for example, for corn, sugar cane).

1 In the guidance screen, press **FUNC**.
2 Press **F6** to align with the current position.
The closest reference track (**A** in Fig. 358) moves and becomes aligned with the center of the tractor: all other reference tracks move accordingly. After the alignment, the deviation value **>2.0>** (**B**) becomes **0.0**.

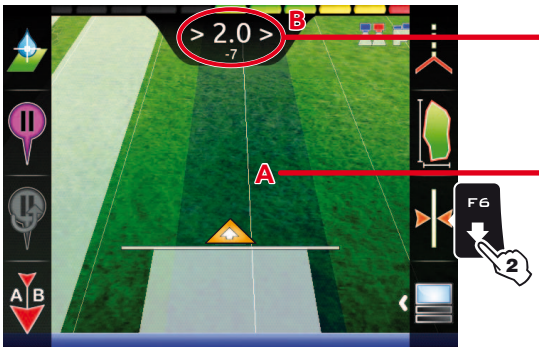


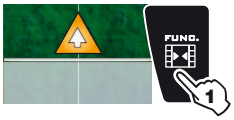
Fig. 358

Fig. 359

Once this function has been used, it is not possible to restore the original reference track.

16.7 F7 New AB

Saves two points A and B on the field, which Bravo 400S uses to draw a line that will act as a reference track (**T0**, Fig. 362) for the current job.



1 In the guidance screen, press FUNC.
2 Drive along the stretch you wish to use as a reference for the job.
Press F7 to enable the function: the request **Mark A?** will appear on the display (Fig. 360).
3 Press OK. The display shows the message **Drive!** (Fig. 361).
4 Keep driving, when you have reached the minimum distance (30 m / 95.5 ft), the request **Mark B?** will appear on the display.
Press OK.
The reference track **T0** and all tracks to be followed during the job will appear on the display (Fig. 362).

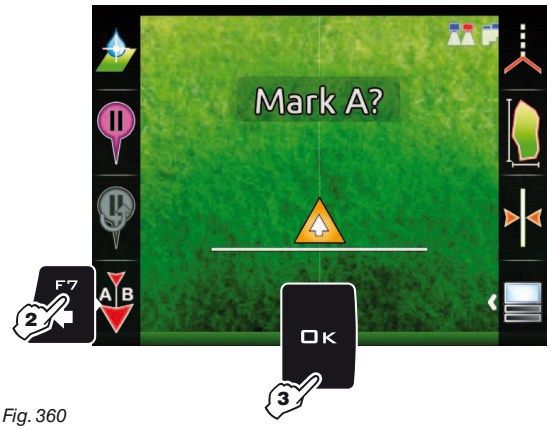


Fig. 360

Fig. 361

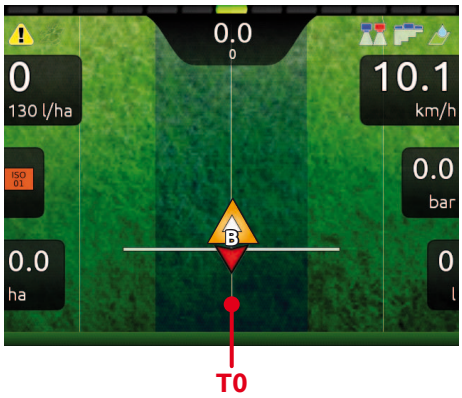


Fig. 362

When this function is used, Bravo 400S deletes the previous reference track T0 (if present), and prompts the operator to save two NEW points A and B on the field, which create a NEW reference track.

WARNING:
Points A and B can be marked only when the vehicle is moving.
The previous track T0 cannot be restored.

16.8 F8 Display

Allows to select different display modes. Includes several functions:

1 In the guidance screen, press **FUNC**.
2 Press **F8**. A list of options concerning display modes will appear (Fig. 363).
Pressing each key will enable the corresponding function:
F2 changes spraying themes (par. 16.8.1);
F4 changes tractor themes (par. 16.8.2);
F6 switches between 2D/3D display mode (par. 16.8.3);
F8 switches between daytime/night time display mode (par. 16.8.4);.

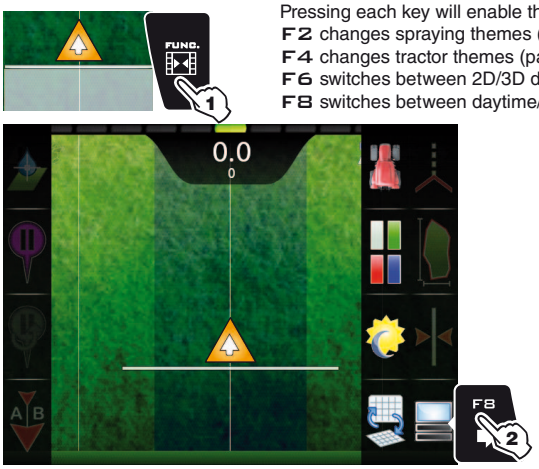


Fig. 363

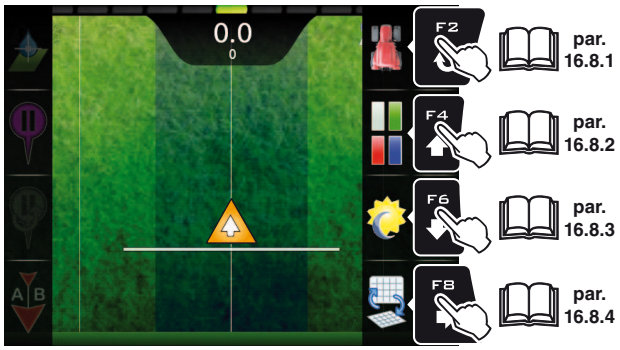


Fig. 364

16.8.1 F2 Tractor themes

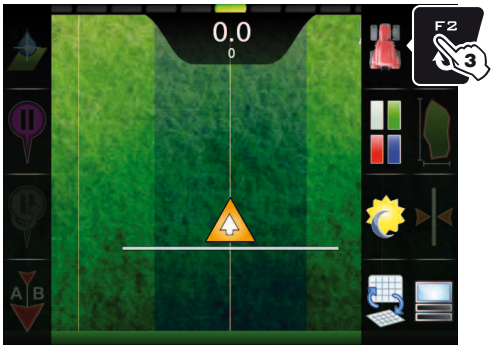


Fig. 365

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F2** in succession to scroll tractor themes.

TRACTOR THEME 1 (DEFAULT)

Fig. 366

THEME 2

Fig. 367

THEME 3

Fig. 368

THEME 4

Fig. 369

THEME 5

Fig. 370

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change | Par. 7.4

16.8.2 F4 Spraying themes

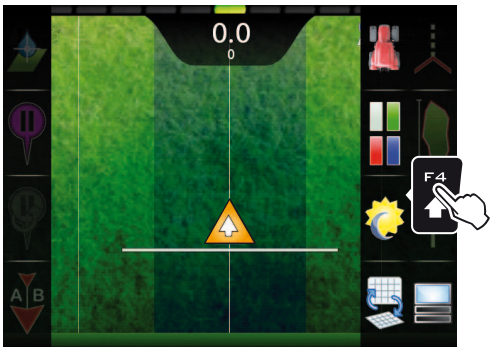


Fig. 371

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F4** in succession to scroll spraying color combinations.

SPRAYING THEME 1 (DEFAULT)

Fig. 372

THEME 2

Fig. 373

THEME 3

Fig. 374

THEME 4

Fig. 375

THEME 5

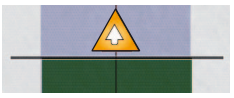
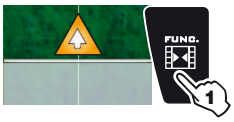


Fig. 376

16.8.3 F6 Daytime/night time display mode



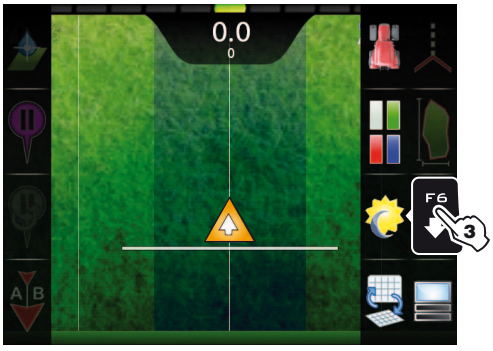


Fig. 377

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F6** in succession to switch between daytime and night time display mode.

DAYTIME DISPLAY MODE (DEFAULT)

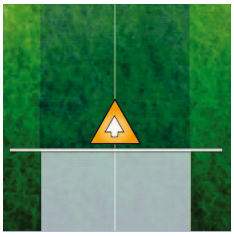


Fig. 378

NIGHT TIME DISPLAY MODE

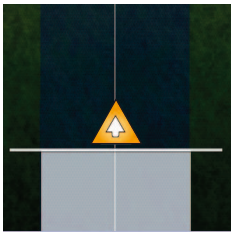


Fig. 379

16.8.4 F8 2D/3D display mode

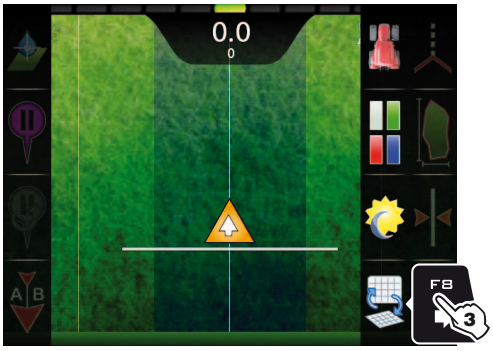


Fig. 380

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F8** in succession to switch between 2D and 3D display mode.

2D DISPLAY MODE (DEFAULT)

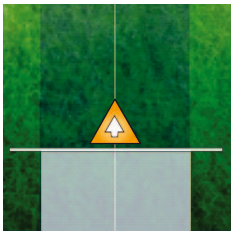


Fig. 381

3D DISPLAY MODE

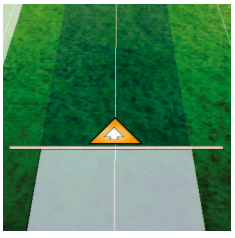


Fig. 382

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Value Increase / decrease | OK Confirm access or data change | ESC Exit function or data change

Par. 7.4

17 MAINTENANCE / DIAGNOSTICS / REPAIRS

17.1 Error messages

MESSAGE ON DISPLAY	CAUSE	REMEDY	WORK MODE
Drive! Machine stopped	Main switch ON with machine stopped	• Start the machine. • Move main switch downwards (position OFF)	**Main ON** **+ AUTO adjustment ON**
Connection to RCU not detected!	Communication problems between monitor and control unit (RCU)	• Check condition of connection cables (and connectors) between monitor and control unit **(par. 5.2).**	--
	The cables are damaged	• Replace the cable	--
GPS receiver not connected!	Wrong connection of receiver cable to Bravo 400S	• Check connection to receiver **(par. 5.2 - 5.7)**	--
	The receiver connection cable is damaged	• Replace the cable	--
	The receiver is damaged	• Replace the receiver	--
Insufficient GPS signal quality!	The position and number of satellites do not allow a suitable driving precision	• Wait for signal strength to improve	--
GPS receiver gives invalid data!	The receiver is establishing a connection to the satellites	• Wait for connection	--
DGPS correction not available!	DGPS signal unavailable in the working area	• Disable DGPS correction **(par. 10.3.1)**	--
	DGPS connecting	• Wait for connection	--
Activate pump! Missing flowrate	Main switch ON with machine stopped but rate at zero	• Start the pump and move the machine.	**Main ON** **+ AUTO adjustment ON**
Minimum tank level reached!	Tank level is lower than the set range value	• Fill the tank **(par. 15.3)**	**Main ON**
	Minimum value was not set correctly	• Check set range value **(par. 10.1.10).**	
Automatic adjustment locked!	Pressure does not reach set value	• Increase driving speed	**Main ON** **+ AUTO adjustment ON**
	Limit was not set correctly	• Check set limit **(par. 10.1.12 - 10.2.2)**	
Decelerate! Pressure too high	The pressure exceeds the maximum level allowed for the nozzle being used	• Decrease driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set maximum pressure for nozzles in use **(par. 10.1.7)**	**Main ON**
Accelerate! Insufficient pressure	The pressure does not reach the minimum value for the nozzle in use	• Increase driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set minimum pressure for nozzle in use **(par. 10.1.7)**	**Main ON**
Flowmeter out of range!	Rate out of the limits allowed by flowmeter	• Modify working conditions to suit flowmeter limits (speed, pressure, etc.) • Make sure that flowmeter parameters are set correctly **(par. 10.1.3)**	**Main ON**

CONTINUES

MESSAGE ON DISPLAY	CAUSE	REMEDY	WORK MODE
Decelerate! **Insufficient flowrate**	Flowrate does not reach the value requested for output	• Decrease driving speed • Make sure that flowmeter parameters are set correctly **(par. 10.1.3)**	**Main ON** **+** **AUTO adjustment ON**
Accelerate! **Too high flowrate**	The flowrate exceeds the value required for output	• Increase driving speed • Make sure that settings in the **Settings Implement** menu (boom width, flowmeter, etc. **chap. 10.1 - 10.2**) are set correctly	**Main ON** **+** **AUTO adjustment ON**
Reduce rotation speed!	RPM exceeds the maximum set value	• Decrease the rotation speed of the moving part • Check the constant set for the rev counter **(par. 10.1.9)**	--
Increase rotation speed!	RPM does not reach the minimum value	• Increase the rotation speed of the moving part • Check the constant set for the rev counter **(par. 10.1.9)**	**Main ON**
Check nozzles wear status!	Difference between measured and calculated flowrate (according to selected nozzle data) higher than set value	• Check that the set nozzle coincides with the one installed on the boom **(par. 10.1.1)** • Replace nozzles	**Main ON** **+** **AUTO adjustment ON**
Switch box connection not detected!	Communication problems between monitor and switches	• Check condition of connection cables (and connectors) between monitor and switch box	--
	The cables are damaged	• Replace the cable	
Seletron connection failed!	One or more spraying points do not respond	• Identify the unrecognized spraying point with the dedicated menu **Device status > Status of the Seletron system (par. 10.6)** • Check that the corresponding spraying point is connected correctly • Check condition of harness on the corresponding spraying point	--
Seletron system error!	Low supply voltage on one or more spraying points	Check battery voltage level	--
		• Identify the unrecognized spraying point with the dedicated menu **Device status > Status of the Seletron system (par. 10.6)** • Check condition of harness on the corresponding spraying point	--

END OF PAR. 17.1 ERROR MESSAGES

17.2 Troubleshooting

FAULT	CAUSE	REMEDY
The display does not switch on	No power supply	• Check power supply connection
	Computer is OFF	• Press the ON key
Valve controls take no effect	Valves not connected	• Connect the connectors
One valve does not open	No power supply to valve	• Check valve electric connection and operation
Speed reading is unstable	Job start procedure was launched at a point too far from the field to be sprayed	• Start a new job **(par. 12.5)** closer to the field.
Output volume readout inaccurate	Wrong setup	• Check boom setup **(par. 10.1.2 - 10.2.1)** • Check the setup of the flowmeter constant **(par. 10.1.3)** • Check pressure sensor full scale setting **(par. 10.1.5)**
Distance traveled count displayed does not match actual distance covered	Wrong setup	• Check boom setup **(par. 10.1.2 - 10.2.1)** • Check implement geometry **(par. 10.1.14 - 10.1.15 - 10.2.3 - 10.2.4)** • Check tractor geometry **(par. 10.3.4)**
Sprayed fluid count displayed does not match litres/gal actually sprayed	Wrong setup	• Check the setup of the flowmeter constant **(par. 10.1.3)** • Check selected nozzle configuration **(par. 10.1.1 - par. 12.5)**
Unable to reach output volume value set for the automatic operation	Wrong setup	• Check spray rate setup **(par. 12.5 - 16.1)** • Check the setup of the boom width **(par. 10.1.2)**
	System not adequately sized to provide required rate	• Check maximum pressure valve setting • Make sure control valve is adequate for specific system
	Control valve malfunction	• Check valve operation
Instantaneous pressure readout inaccurate	Wrong setup	• Check full scale setup for pressure sensor **(par. 10.1.5)**
	Pressure sensor not calibrated	• Perform the calibration **(par. 10.1.13)**
	Pressure sensor wrong installation	• Check connections to pressure sensor
Instantaneous pressure is not displayed	Wrong setup	• Check pressure sensor setting **(par. 10.1.5)**
	Computer does not receive signals from pressure sensor	• Check connections to pressure sensor
	Pressure sensor wrong installation	• Check connections to pressure sensor
Rpm readout inaccurate	Wrong setup	• Check rpm sensor constant setting **(par. 10.1.9)**
Rpm value not displayed	Monitor does not receive signals from RPM sensor	• Check connections to RPM sensor
	Rpm sensor wrong installation	• Check connections to RPM sensor
Pump failure alarm permanently active	Monitor does not receive signals from Pump Protector sensor	• Check connections to Pump Protector sensor

17.3 Cleaning rules

- Clean only with a soft wet cloth.
- DO NOT use aggressive detergents or products.
- DO NOT aim water jets directly at monitor and control unit.

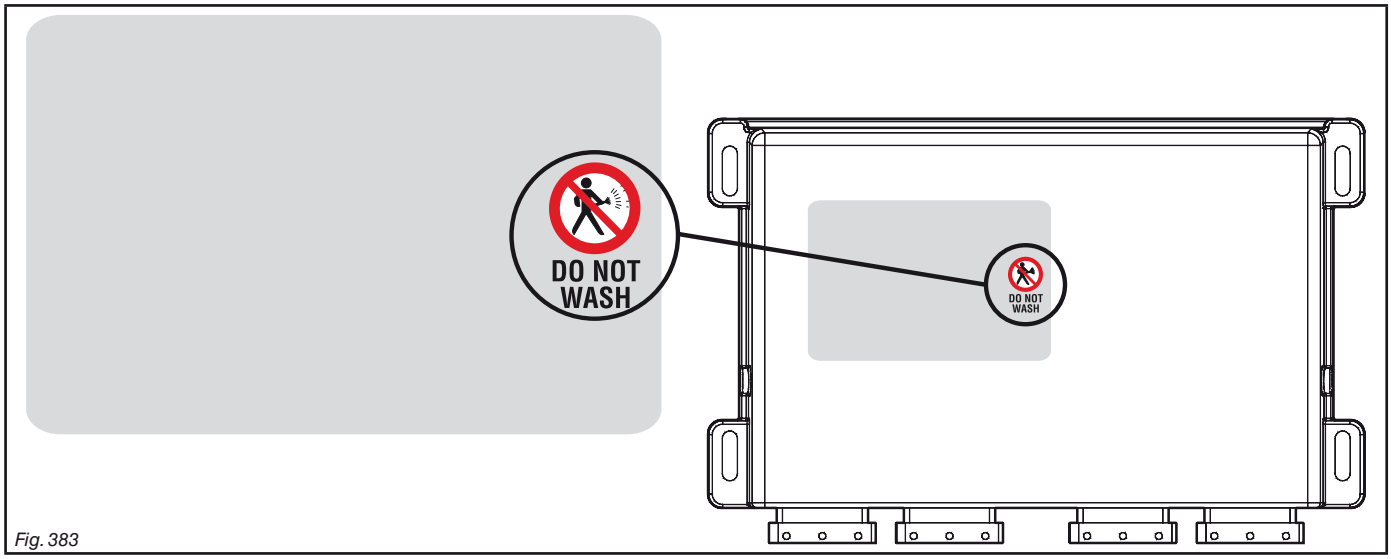


Fig. 383